THE
CAMBRIDGE EDITION
OF THE WORKS OF
SCHOPENHAUER

On the Fourfold Root of the Principle of Sufficient Reason and Other Writings

CAMBRIDGE

Arthur Schopenhauer

On the Fourfold Root of the Principle of Sufficient Reason and Other Writings

The purpose of the Cambridge Edition of the Works of Schopenhauer is to offer translations of the best modern German editions of Schopenhauer's work in a uniform format suitable for Schopenhauer scholars, together with philosophical introductions and full editorial apparatus.

This volume of new translations unites three shorter works by Arthur Schopenhauer that expand on themes from his book *The World as Will and Representation*. In *On the Fourfold Root* he takes the principle of sufficient reason, which states that nothing is without a reason why it is, and shows how it covers different forms of explanation or ground that previous philosophers have tended to confuse. Schopenhauer regarded this study, which he first wrote as his doctoral dissertation, as an essential preliminary to *The World as Will and Representation*. *On Will in Nature* examines contemporary scientific findings in search of corroboration of his thesis that processes in nature are all a species of striving towards ends; and *On Vision and Colours* defends an anti-Newtonian account of colour perception influenced by Goethe's famous colour theory. This is the first English edition to provide extensive editorial notes on the different published versions of these works.

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General Editor

Christopher Janaway

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Arthur Schopenhauer

On the Fourfold Root of the Principle of Sufficient Reason On Vision and Colours On Will in Nature

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General editor's preface

Schopenhauer is one of the great original writers of the nineteenth century, and a unique voice in the history of thought. His central concept of the will leads him to regard human beings as striving irrationally and suffering in a world that has no purpose, a condition redeemed by the elevation of aesthetic consciousness and finally overcome by the will's self-denial and a mystical vision of the self as one with the world as a whole. He is in some ways the most progressive post-Kantian, an atheist with profound ideas about the human essence and the meaning of existence which point forward to Nietzsche, Freud, and existentialism. He was also the first major Western thinker to seek a synthesis with Eastern thought. Yet at the same time he undertakes an ambitious global metaphysics of a conservative, more or less pre-Kantian kind, and is driven by a Platonic vision of escape from empirical reality into a realm of higher knowledge.

Schopenhauer was born in 1788, and by 1809 had gone against his family's expectations of a career as a merchant and embarked on a university career. He completed his doctoral dissertation *On the Fourfold Root of the Principle of Sufficient Reason* in 1813, then spent several years in intensive preparation of what became the major work of his life, *The World as Will and Representation*, which was published at the end of 1818, with 1819 on the title page. Shortly afterwards his academic career suffered a setback when his only attempt at a lecture course ended in failure. Thereafter Schopenhauer adopted a stance of intellectual self-sufficiency and antagonism towards university philosophy, for which he was repaid by a singular lack of reaction to his writings. In 1836 he published *On Will in Nature*, an attempt to corroborate his metaphysics with findings from the sciences, and in 1841 two self-standing essays on free will and moral philosophy, entitled *The Two Fundamental Problems of Ethics*. A large supplementary second volume to *The World as Will and Representation* appeared in 1844, accompanied by a revised version of the original which now appeared as Volume 1; then in 1851 another two-volume work, *Parerga and Paralipomena*, a collection of essays and observations. Only in the 1850s did serious interest in Schopenhauer's philosophy begin, with a favourable review appearing in an English journal and a few European universities offering courses on his work. In this final decade before his death in 1860 he published a third edition of *The World as Will and Representation* and a second edition of *The Two Fundamental Problems of Ethics*. After Schopenhauer's death his follower Julius Frauenstädt produced the first six-volume edition of his works in 1873, providing the basis for many subsequent German editions up to the *Sämtliche Werke* edited by Arthur Hübscher, which we use as the basis for our translations in the present edition.

Though Schopenhauer's life and the genesis of his philosophy belong to the early part of the nineteenth century, it is the latter half of the century that provides the context for his widespread reception and influence. In 1877 he was described by Wilhelm Wundt as ‘the born leader of non-academic philosophy in Germany’, and in that period many artists and intellectuals, prominent among them Richard Wagner, worked under the influence of his works. The single most important philosophical influence was on Nietzsche, who was in critical dialogue throughout his career with his ‘great teacher Schopenhauer’. But many aspects of the period resonate with Schopenhauer's aesthetic theory, his pessimism, his championing of the *Upanishads* and Buddhism, and his theory of the self and the world as embodied striving.

Over the last three decades interest in Schopenhauer in the English-speaking world has been growing again, with a good number of monographs, translations, and collections of articles appearing, where before there were very few. More general trends in the study of the history of philosophy have played a part here. There has recently been a dramatic rise in philosophical interest in the period that immediately follows Kant (including the German Idealists and Romanticism), and the greater centrality now accorded to Nietzsche's philosophy has provided further motivation for attending to Schopenhauer. Yet until now there has been no complete English edition of his works. The present six-volume series of Schopenhauer's published works aims to provide an up-to-date, reliable English translation that reflects the literary style of the original while maintaining linguistic accuracy and consistency over his philosophical vocabulary.

Almost all the English translations of Schopenhauer in use until now, published though they are by several different publishers, stem from a single translator, the remarkable E. F. J. Payne. These translations, which were done in the 1950s and 1960s, have stood the test of time quite well and performed a fine service in transmitting Schopenhauer to an English-speaking audience. Payne's single-handed achievement is all the greater given that he was not a philosopher or an academic, but a former military man who became a dedicated enthusiast. His translations are readable and lively and convey a distinct authorial voice. However, the case for new translations rests partly on the fact that Payne has a tendency towards circumlocution rather than directness and is often not as scrupulous as we might wish in translating philosophical vocabulary, partly on the fact that recent scholarship has probed many parts of Schopenhauer's thought with far greater precision than was known in Payne's day, and partly on the simple thought that after half a century of reading Schopenhauer almost solely through one translator, and with a wider and more demanding audience established, a change of voice is in order.

In the present edition the translators have striven to keep a tighter rein on philosophical terminology, especially that which is familiar from the study of Kant – though we should be on our guard here, for Schopenhauer's use of a Kantian word does not permit us to infer that he uses it in a sense Kant would have approved of. We have included explanatory introductions to each volume, and other aids to the reader: footnotes explaining some of Schopenhauer's original German vocabulary, a glossary of names to assist with his voluminous literary and philosophical references, a chronology of his life, and a bibliography of German texts, existing English translations, and selected further reading. We also give a breakdown of all passages that were added or altered by Schopenhauer in different editions of his works, especially noteworthy being the changes made to his earliest publications, *On the Fourfold Root* and the single-volume first edition of *The World as Will and Representation*. A further novel feature of this edition is our treatment of the many extracts Schopenhauer quotes in languages other than German. Our guiding policy here is, as far as possible, to translate material in any language into English. The reader will therefore not be detained by scanning through passages in other languages and having to resort to footnote translations. Nevertheless, the virtuoso manner in which Schopenhauer blends Latin, Greek, French, Italian, and Spanish extracts with his own prose style is not entirely lost, since we have used footnotes to give all the original passages in full.

Christopher Janaway

Editorial notes and references

Three kinds of notes occur in the translation:

(1) Footnotes marked with asterisks (*, **, and so on) are Schopenhauer's own notes.
(2) Footnotes marked with small letters (a, b, c) are editorial notes. These either give information about the original wording in Schopenhauer's text (in German or other languages), or provide additional editorial information. All (and only) such *additional* information is enclosed in brackets []. All footnote material *not* in brackets consists of words from the original text.
(3) Endnotes marked with numerals 1, 2, 3. The endnotes for each work, given at the end of the individual work, indicate variations between the different texts of the works.

Schopenhauer's works are referred to by the following abbreviations. In each instance, we give reference to the Hübscher volume and page. We give page references to those Cambridge editions published as of the date of the present volume: *BM* and *FW* are found in *The Two Fundamental Problems of Ethics* (2009) and *WWR* I (2010). The Hübscher page numbers can be used to locate passages in future volumes of the Cambridge edition:

Hübscher *SW* 1–7	*Sämtliche Werke*, ed. Arthur Hübscher (Mannheim: F. A. Brockhaus, 1988), Vols. 1–7.
BM	*On the Basis of Morals* [*Über die Grundlage der Moral*].
FR	*On the Fourfold Root of the Principle of Sufficient Reason* [*Über die vierfache Wurzel des Satzes vom zureichenden Grunde*].
FW	

	On the Freedom of the Will [*Über die Freiheit des Willens*].
PP 1, 2	*Parerga and Paralipomena* [*Parerga und Paralipomena*], Vols. 1 and 2.
VC	*On Vision and Colours* [*Über das Sehn und die Farben*].
WN	*On Will in Nature* [*Über den Willen in der Natur*].
WWR 1, 2	*The World as Will and Representation* [*Die Welt als Wille und Vorstellung*], Vols. 1 and 2.

Unpublished writings by Schopenhauer are referred to thus:

GB	*Gesammelte Briefe*, ed. Arthur Hübscher (Bonn: Bouvier, 1978).
HN 1–5	*Der handschriftliche Nachlaß*, ed. Arthur Hübscher (Frankfurt-am-Main: Kramer, 1970), Vols. 1–5.
MR 1–4	*Manuscript Remains*, ed. Arthur Hübscher, trans. E. F. J. Payne (Oxford: Berg, 1988), Vols. 1–4 [a translation of *HN*, Vols. 1–4].

Passages in Kant's *Critique of Pure Reason* are referred by the standard method, using A and B marginal numbers corresponding to the first and second editions of the work. Other writings by Kant are referred to by volume and page number of the monumental '*Akademie*' edition (Berlin: Georg Reimer/Walter de Gruyter, 1900–), in the form Ak. 4: 397. References to works of Plato and Aristotle use the standard marginal annotations.

Introduction On the Fourfold Root of the Principle of Sufficient Reason

Genesis of the work

On the Fourfold Root of the Principle of Sufficient Reason began life as Schopenhauer's dissertation. In his dissertation, Schopenhauer begins with a general statement of the principle of sufficient reason: ‘nothing is without a ground for its being rather than not being.’ Schopenhauer argues that the principle is derived from *four* different ground-consequent relations, what he calls the four ‘roots’ of the principle. He argues that previous philosophers recognized and conflated *two* of these roots: that in order for a proposition to be true it must have a reason and that any alteration of a real object must have a cause. The former Schopenhauer called ‘the principle of sufficient reason of knowing’ and the latter he called ‘the principle of sufficient reason of becoming’. Schopenhauer argues for recognition of two more roots that he refers to as ‘the principle of sufficient reason of being’ and ‘the principle of sufficient reason of acting’. Schopenhauer believed that were philosophers carefully to specify to which of the four different forms of the principle of sufficient reason they refer, they would be spared a great deal of confusion.

Schopenhauer had planned to submit the dissertation to the University of Berlin for his doctorate in philosophy. Instead he sent it to the University of Jena. His change of plan was a function of circumstance. After two years at the University of Göttingen, he switched his allegiance from medicine to philosophy due to the influence of his first philosophy professor, Gottlob Ernst Schulze. In 1811 Schopenhauer enrolled at Berlin, drawn there with the hope that in Johann Gottlieb Fichte he would hear a great philosopher. But after his *a priori* veneration for Fichte had turn to disdain, and after fearing that Berlin would be attacked by Napoleon, in May 1813 he fled to Weimar, and then travelled south to the small town of Rudolstadt, where he laboured on his dissertation from July to the end of September. Fearing that sending his dissertation to Berlin could make it a casualty of the war, on 24

September he sent it to the nearby University of Jena, after paying the required examination fee.

The letter, composed in Latin, accompanying his dissertation, composed in German, is surprisingly uncharacteristic for a philosopher whose typical voice was confident, even sometimes arrogant about the quality of his work. After providing the dean of the philosophy faculty, Heinrich Carl Eichstädt, with a description of his academic preparation, he requested that Jena's ‘sagacious’ faculty advise him whether they found anything unclear, rambling, untrue, or even offensive in his work. In matters of philosophy, he continued, it was not wise to ‘rely on one's own judgement’, and he explained that in Rudolstadt he had no philosophically learned friends to review his manuscript. He was also particularly keen to know whether anyone had anticipated his criticisms of Kant's proof of the law of causality, since he lacked access to a good library.[1] Eichstädt quickly circulated a letter announcing the dissertation while mentioning that its author was son of ‘the well-known authoress, Frau Hofrätin Schopenhauer’. On 2 October 1813, Schopenhauer was awarded his degree *in absentia*, with the distinction *magna cum laude.*

Despite the conciliatory tone of Schopenhauer's communications with the faculty at Jena, in a more characteristic move, the young philosopher was simultaneously arranging to have 500 copies of the work published,[2] and the work was out by the end of October. Unfortunately, the published dissertation earned, at best, lukewarm reviews.[3] Indeed, the most stinging might have come from the young man's mother, who asked sarcastically whether his book was for pharmacists. Schopenhauer retorted that his work would still find readers when not even a single copy of her writings could be found in a junk yard. Undaunted, Johanna Schopenhauer spat back, ‘Of yours the entire printing will still be available’.[4]

Differences between editions

Thirty-four years, 1813 to 1847, lapsed between the two editions of Arthur Schopenhauer's philosophic first-born, *On the Fourfold Root of the Principle of Sufficient Reason*. At nearly sixty, Schopenhauer understated the substantive changes between the editions. He claimed that it was his intent ‘to deal with my youthful self indulgently, and as far as it is ever possible, to let him have his say', but to 'cut him off' when he said something 'incorrect or superfluous'. Although in this way Schopenhauer allowed that the later edition corrected errors and deleted superfluous material, to the older philosopher the most significant difference between the two editions was a matter of voice. 'The sensitive reader', he claimed, 'will certainly never be in doubt whether he hears the cadence of the old or the young man'. He characterizes the voice of the 1813 version as an 'unassuming tone' born of a young man who is 'still naïve enough to believe quite seriously that all those who occupy themselves with philosophy could have nothing to do with anything else but the truth'. This youthful voice he contrasts with that of 'the firm, but at times somewhat acerbic voice of the old man who finally had to discover what a noble society of tradespeople and submissive sycophants he has fallen among and what they aimed at' (p. 3). Certainly there are noticeable changes of voice between the two editions. For example, in § 10 of the 1854 edition, Schopenhauer changes the young man's critique of Christian Wolff from 'I don't understand' to the straightforward claim that Wolff made 'a mistake' (p. 24). It is apparent that as a young man Schopenhauer's deference was intentional. In § 46 of the 1813 dissertation, Schopenhauer praised Schelling for providing an illuminating account of Kant's distinction between the intelligible and empirical character and the relation between freedom and nature. Yet his marginal notes in Schelling's text are bluntly critical. In this passage, Schelling did not refer to Kant by name, but to idealism. Schopenhauer's marginal notation in his copy of Schelling's *Philosophische Schriften* (1809) scolds, 'Kant, you unseemly scoundrel'.[5] In 1854, the entire section, § 46, is eliminated. Nevertheless, in no other book did he delete so much of the original, and nowhere else would he make such substantive philosophical changes.

Yet these changes to *On the Fourfold Root* were made relatively late in Schopenhauer's philosophical career, and they were prompted by the significant development of a philosophic train of thought, first articulated in his principal work, *The World as Will and Representation* (1819), and further developed in *On Will in Nature* (1836) and the second edition of his principal work (1844). This development placed the first edition of *On the Fourfold Root* in a curious relation to his principal work, for in the 'Preface to the first edition' of *The World as Will and Representation*, Schopenhauer makes three imposing demands on readers seeking to truly understand his philosophy. The second of these demands was that his readers study the introduction or propaedeutic to this work, *On the Fourfold Root*.[6] He claims that readers will only be able to engage in his novel way of philosophizing by knowing what this principle is, what it signifies, and the limits of its validity. Not only would his readers learn that the world exists only as a result of this principle, but they would also realize that this principle is the form of any object and that all objects are conditioned by the subject.

Yet when Schopenhauer issued this demand in 1818, he was a much different philosopher than the younger dissertator of 1813. He was more philosophically mature, and he had revised his understanding of the significance of Kant's philosophy. Consequently in the first preface to his principal work, he forewarns his readers that he could now provide a better presentation of the subject matter of his dissertation because he could clarify many of the ideas that resulted from his excessive preoccupation with the Kantian philosophy, particularly his uncritical employment of Kant's pure categories of the understanding and Kant's views of the inner sense and the outer sense. Schopenhauer explains that these Kantian ideas were only secondary concerns, so he had not thought about them deeply. With no sense of the burden he is about to impose on his readers, he then casually mentions that, after they become acquainted with his principal work, correction of these wayward passages will come automatically to readers’ minds.

Schopenhauer's remarks concerning the means by which he would clarify his dissertation only hint at the changes he would make twenty-nine years after those mentioned in the first edition of his principal work. Between the time of the two editions of *On the Fourfold Root*, he had discovered the first edition of Kant's *Critique of Pure Reason* in which he found a greater commitment to idealism and fewer contradictions than in its second edition. He had also rehearsed for the first time his physiological arguments for the intellectual nature of intuition in his *On Vision and Colours*, and he had discussed how his philosophy was corroborated by the sciences in *On Will in Nature*. He had also published his ethics in the ‘narrower sense’ in *The Two Fundamental Problems of Ethics*, and he had more than doubled the length of *The World as Will and Representation* in its second edition by including a second volume of essays that supplemented his discussions in the single-volume first edition.[7] Consequentially, the second edition of *On* *the Fourfold Root* is a work dramatically unlike what Schopenhauer envisioned, even if 'clarified', when he wrote the 1819 introduction, and the work now serves as an introduction to his principal work in a way that does not require readers to correct wayward discussions themselves.

There are obvious differences between the two editions. In the Hübscher *Sämtliche Werke*, both editions have eight chapters, and whereas the earlier version had fifty-nine sections, the second has fifty-two. Yet the second edition runs to some sixty-seven pages longer than the first. While some materials from omitted sections find their place in the second edition, other sections, §§ 15, 17, 22, 46, 49, 50, 51, and 56, virtually disappear.[8] He adds a new section (§ 12) on Hume, but still does not add Fichte to the section on 'Kant and his School' (§ 13). But unlike in his dissertation, where Fichte is never mentioned, he now freely abuses his former teacher, as he does his *bête noire*, Hegel, who was also ignored in the dissertation.[9] Indeed, he includes unrestrained complaints against his contemporaries and even blames Kant for setting the stage for the wild flights into 'Cloudcuckooland' made by post-Kantians (p. 107). He cuts his only quotation from Goethe, but adds two more and denounces the reception of Goethe's colour theory. He adds references to Eastern philosophy and religion, and he adds references to relevant supporting discussions found in his other books. To further indicate his allegiance to Kant, he replaces the word 'metaphysical' with 'transcendental'.

The dissertator, however, is a philosopher of his times. Like the German Idealists, Schopenhauer is convinced that Kant's great unknown, the thing in itself, is the weak point of the critical philosophy.[10] At Göttingen he had been instructed by the author of *Aenesidemus* (1792), Gottlob Ernst Schulze, who argued that by viewing things in themselves as the cause of empirical intuitions, Kant had employed the concept of causality transcendently, that is, Kant had applied the concept beyond the bounds of all possible experience. His Berlin professor Fichte had also considered the very idea of the thing in itself to be nonsense. So it is not surprising that in his early reflections on Kant, he would eschew the thing in itself, and that he would proudly state in his dissertation that 'our investigation does not rigidify in a thing in itself' (see p. 184). By the time of his principal work, however, Schopenhauer adopts Kant's distinction between appearances and things in themselves, chides the German Idealists for abandoning it, and considers this distinction to be Kant's ‘greatest merit’.[11]

Just as Schopenhauer reversed his stance toward the thing in itself long before the second edition of *On the Fourfold Root*, the same was true of his early commitment to the function of Kant's twelve pure categories of the understanding in the intuition of the external world. To be sure, the dissertator was breaking free of the Kantian paradigm in which the perception of the external world was the result of a synthesis of sensory intuitions via the pure categories of the understanding. For example, the younger philosopher writes ‘I agree with Kant that the law of causality in connection with the other categories, thus generally with the understanding, makes possible the totality of objective cognition that we call experience… Except that, according to my view, the understanding does this only by unifying time and space through its categories, not through mere categories alone’ (see p. 166). Schopenhauer struggles to describe this unity or synthesis as an unconscious, immediate inference while he views Kant as describing it as involving mediated inferences:

> Through the category of causality we originally cognize the object as *actual,* i.e. *acting* on us. That we are not conscious of this inference presents us with no difficulty: we are never conscious of the inference from the colour of the body to its shape. Moreover, it is no inference of reason, no combining of judgments: we have nothing to do with the concept of the category, but with the category itself. The category itself leads immediately from the effect to the cause; therefore, we are as little conscious of its function as that of the other categories, since precisely through these categories our consciousness changes from dull sensation to intuition. I would like to give the name of *inference of understanding* to this inference. It is a type of inference that is not mediated through any abstract concept. (see p. 168)

Three years later, in *On Vision and Colours,* he would abandon this view in his analysis of the intellectual nature of intuition. He would also argue in his principal work that one of Kant's gravest mistakes was not to distinguish sufficiently between ‘intuitive cognition’ and ‘abstract, discursive cognition’.[12] The understanding is now no longer the faculty of concepts in any sense for Schopenhauer; only reason is the faculty of concepts and of inferences. Reason, therefore, plays no role in the cognition of natural objects. He notes that non-human animals are incapable of formulating concepts but, just like humans, they are aware of a world of spatio-temporal objects, standing in causal relations. For this reason Schopenhauer attributes understanding to animals, but he follows the long-standing philosophical tradition of not attributing reason to them. Yet Schopenhauer differs from Kant, who views the faculty of reason as conferring a dignity to humans, making humans morally considerable and animals not. To Schopenhauer, animals share the same essence as humans: they are also will; they also suffer; and they are also morally considerable.

To accommodate his new insights, Schopenhauer made the appropriate changes in the second edition. So he carefully notes in the second edition that bodily sensations are the data for the application of the law of causality, but the body itself does not present objects. The sole function of the understanding, or 'intellect', becomes the immediate, intuitive apprehension of causal connections between objects. And Schopenhauer jettisons what he calls 'the complicated clockwork of the twelve Kantian categories' (p. 76). He also drops the reference to the body as the 'immediate object', not simply to remove obscuring jargon to which the dissertator was inclined, but to denote that sensations are not objects.[13]

In addition to eliminating vestiges of the Kantian account of cognition of the external world, Schopenhauer also had to rid the dissertation of views that were inconsistent with the metaphysics developed in *The World as Will and Representation*. This was especially true of his early view that will functioned causally. Consequently § 47 of the first edition, 'Causality of Will on Cognition', becomes § 44 in the second, and it receives the new title, 'Influence of Will on Cognition'. The initial sentence is transformed from 'The will not only causally affects the immediate object' to 'the influence that will exercises on cognition is not based on causality'. The reason for this change is straightforward. The cognizing and willing subjects are identical, which absolutely rules out any causal relation between them. Schopenhauer had also argued in *The World as Will and Representation* that the body and will are identical.[14] Therefore there is no causality between will and body, which are one and the same. Moreover, because causality functions only in the world as representation, within the scope of the principle of sufficient reason, and will is outside the scope of the principle of sufficient reason, there can be no causal relation between will and representation. So in the second edition, Schopenhauer also omits § 46, ‘Motive, Decisions, Empirical and Intelligible Character’, eliminating a discussion of how ‘the decision appears to be related to the subject of willing, and appears to be the point of contact between the unknowable subject of will (lying outside of time) and motives (lying in time)’ (p. 187).[15] Even in the first edition, however, Schopenhauer realized that he could not be speaking literally about the relation of the intelligible and empirical characters: ‘Perhaps I could better indicate what is meant, although also figuratively, if I call it [the intelligible character] a universal act of will lying outside of time, of which all temporal acts are only the emergence, the appearance’ (ibid.). He would use this metaphor elsewhere.[16]

The Second Edition

The alterations Schopenhauer's dissertation underwent in the second edition formed it into the proper introduction to his principal work, as did his elaborations on a number of his earlier views. To be sure, it retains its original structure, except that he adds a preface to the second edition. In his statement of method in the first chapter, he still evokes ‘Plato, the divine’ and the ‘amazing Kant’ (p. 1). He argues that the method of philosophy – indeed, the method of all knowledge – must comply with two laws: the law of homogeneity and the law of specification. The former requires that we note similarities among things, uniting them into species, and species into genera, until we subsume all under some all-encompassing concept. The latter principle moves the consideration in the reverse direction. The law of specification recognizes genera under this all-embracing concept of family, then species in the genera, and the individual in the species. He agrees with Kant. Both laws are transcendental *a priori* principles of reason, and as such nature must conform to them. The significance of the principle of sufficient reason remains the same: it is ‘the mother of all sciences’, since the principle is that which structures a mere aggregate of facts into a coherent body of knowledge, one in which a particular finding follows from another as its grounds. The principle is also that which always permits us to ask ‘why’. Later, he makes his infamous statement that the principle of sufficient reason is ‘the principle of all explanation’ (p. 148). He still employs Christian Wolff's statement of the principle of sufficient reason as its most general expression: *Nihil est sine ratione cur potius sit quam non sit*, ‘Nothing is without a reason why it is rather than it is not’ (p. 10). Schopenhauer will argue, however, that the Wolffian formula is simply an abstraction, following the law of homogeneity, derived from four different relations, each of which is based on a synthetic *a priori* law, the so-called fourfold roots of the principle of sufficient reason, the subjects of the fourth to the seventh chapters.[17]

In the second chapter, ranging from Plato through Kant and his school, Schopenhauer surveys the philosophical literature on his subject, finding that previous philosophers failed to distinguish clearly among the various forms of the principle and only gradually and confusedly recognized two expressions of the principle, namely, that in order for a proposition to be true it must have a reason and that any alteration of a real object must have a cause. The former Schopenhauer would designate as ‘the principle of sufficient reason of knowing’ and the latter as ‘law of causality’, to which he also will refer as ‘the principle of sufficient reason of becoming’ (p. 38). Whereas in the dissertation Schopenhauer claimed that the principle of sufficient reason itself can not be proven, and he claims that to ask for a ‘why’ for this principle is to ask a question that cannot be answered, in the second edition he drops the last claim and provides a dialectical proof. To demand a proof for the principle is already to assume it to be true and to do so is to require ‘a proof for the right to require a proof’ (p. 28).

In the third chapter, Schopenhauer introduces the basis on which he develops the four ‘roots’ of the principle of sufficient reason. He does so on the basis of that which he viewed as the first, universal, and essential condition for all cognition: the correlativity of subject and object. Our cognizing consciousness, our sensibility, understanding, and reason, divides into subject and object. All experience, any cognition, and any awareness require the experiencer and the experienced, the cognizer and the cognized, the subject of awareness and the object of awareness. The subject is never the object or the object the subject. By observing different objects of awareness, different sorts of representations, Schopenhauer develops four classes of objects, and the four ‘roots’ of the principle of sufficient reason.

It is useful to examine how Schopenhauer sees the principle of sufficient reason governing different species of a ground-consequent relation.

Principle of sufficient reason of becoming

The fourth chapter of *On the Fourfold Root* focuses on the principle of sufficient reason of becoming, or the law of causality, the form of the principle that governs intuitive, complete, empirical representations. The sum total of these intuitive representations constitutes empirical reality. In brief, Schopenhauer calls the class of objects governed by this form of the principle of sufficient reason 'real objects', and this principle governs alterations of states of things and not things themselves. He states this principle as: 'If a new state of one or more real objects appears, then there must be another, previous state from which the new one follows according to a rule, i.e. as often as the first exists, every time. Such a sequence is called a *consequence*, the first state a *cause*, the second an *effect*' (p. 38). Since the principle of sufficient reason is the source of all necessity, Schopenhauer attributes a type of necessity to each of its expressions. In this case of the law of causality, the form of necessity is 'physical necessity', that is, once the cause appears, the effect cannot fail to appear (p. 146).

The fourth chapter is the chapter that received the most extensive revisions in the second edition. Schopenhauer had to carefully cut elements that reflected his earlier uncritical acceptance of Kant's account of the empirical intuition of objects that constitute the external world. It contains nine sections in each edition (17–25 in the second, 18–26 in the first), but its length more than doubles, despite dropping § 22 'Mental images and dreams. Fantasy' in the second edition. This expansion is not due simply to his adding criticisms directed at his contemporaries and citing ancestors of his views, but is due primarily to his significantly expanding the section on 'Principle of sufficient reason of Becoming'[18] and by his adding § 21 'Apriority of the concept of causality – Intellectual basis of empirical intuition. – The understanding', where Schopenhauer elaborates on the physiological arguments for the intellectual nature of intuition, first stated in *On Vision and Colours*. It is in § 21 that Schopenhauer clearly and emphatically articulates the intellectual nature of intuition, arguing that 'the understanding first creates and produces this objective external world from the raw stuff of a few sensations in the sense organs' (p. 52). Moreover, since sensation is, for Schopenhauer, 'a completely subjective process internal to the organism because it is beneath the skin' (p. 79), he believes that he maintains Kant's fundamental idealistic insight and avoids the Achilles' heel of Kant's philosophy, namely, applying the law of causality in transcendent fashion by positing things in themselves as the cause of sensation.[19]

§ 23 'Disputation of the proof of the apriority of the concept of causality advanced by Kant', expands on materials provided in § 24 of the dissertation.[20] Here Schopenhauer criticizes Kant's argument in the infamous 'Second analogy'[21] where Kant attempts to show the *a priori* status and necessity of the law of causality from the fact that it is required to recognize an objective succession of representations, in contrast to a mere subjective succession of alterations. To represent a subjective sequence, Kant introduces the example of a house surveyed visually from top to bottom, and to illustrate an objective sequence, an example of observing a ship moving steadily downstream. Kant claims that the former has no necessary ordering, and the latter an irreversible and necessary ordering, and that this distinction could not be made if alteration were not an instance of an effect following a cause. Schopenhauer objects. Kant forgets that both examples deal with states of affairs in which objects change in regard to one another. The observer of the ship is stationary, whereas in the example of the house, the subject's eyes move and, given this movement, the sequence is just as irreversible as that of the ship. Had the observer the power to move the ship like that of moving the eyes, the course of the ship would be reversible. In either case, the cognition of the house, or the movement of the ship, is an event governed by causal laws. Events can succeed in an objective sequence without the former event causing the latter, such as a roof tile striking you as you happen to leave your house. Here it is not your leaving the house that is the cause of your being struck (unless, perhaps, you slammed the door too hard), but the sequence is objective. Or consider the sequence of notes in a piece of music. This sequence is not determined by the listener, but is an objective sequence that is such that the earlier note is not the cause of the latter. Schopenhauer concludes that the apprehension of objective sequences is direct and does not require inferring it from causal laws, and suggests that since we are aware of countless objective temporal sequences, if every one of these successions had to be based on knowledge of causal laws determining these sequences, we would have to be omniscient.[22]

Principle of sufficient reason of knowing

The fifth chapter deals with the second class of objects for the subject, which is concepts or abstract representations, and Schopenhauer refers to the ability to formulate concepts as the faculty of reason, a faculty restricted to human beings. The job of reason is to abstract concepts from intuitive representations, and concepts are meaningful only insofar as they can be traced back to empirical intuitions. And although he promised a new explanation of reason in his dissertation, it was not until the second edition that he would include § 34 ‘Reason’, a section that tripled the length of this chapter. Yet instead of augmenting his earlier views and teasing out new insights, he used this section to vent his frustrations at being ignored for more than thirty years. Here he reviles his contemporaries for the wild flights of reason developed in their philosophy, for portraying this faculty as having some privileged access to the absolute, to the supersensible via some invented ability like ‘intellectual intuition’ (p. 116). Despite his esteem for Kant, he pins the blame here on Kant's view of practical reason and his supreme principle of morality, the categorical imperative.[23] By setting practical reason as the means for justifying metaphysical beliefs about freedom, the soul, and God, Kant had emboldened others to transform theoretical reason into the source of knowledge of such things, even though Kant himself had denied it such extraordinary powers. If practical reason could justify such beliefs, if it could become the source of moral laws *a priori*, it was a small step to view theoretical reason as having the capacity to grasp the object for which Kant said it longed, the unconditional. Schopenhauer sneers that ‘If it is thus taught that we possess a faculty for cognition which is immediate, material (i.e. providing the matter, not merely the form), and supersensible (i.e. leading beyond all possibility of experience), a faculty expressly intended for metaphysical insight, one inherent in us for such a purpose, and that this faculty comprises *our reason* – then I must be so impolite as to call it a bare-faced lie’ (p. 109). This barefaced lie he then traced to what he regarded as Jacobi's perversion of

Kant and to the development of Fichte's, Schelling's, and Hegel's philosophies:

> For fifty years, so-called German philosophy based itself on such a completely fictitious faculty, snatched out of thin air: first as the free construction and projection of the absolute I and its emanations into the not-I; then as the intellectual intuition of absolute identity, or indifference, and its evolutions into nature, or the origin of God out of his dark ground, or groundlessness, *à la* Jakob Böhme; finally as the pure self-thinking of the absolute idea and the theatre of the ballet of the self-movement of concepts; and all the white still as immediate apprehension of the divine, the supersensible, of holiness, of fineness, truthfulness, goodness – and whatever other ‘nesses’ may be desirable – or even a mere presentiment, *Ahnen*…of all that splendidness. (p. 116)

Yet Schopenhauer's treatment of the principle of sufficient reason of knowing remains the same as in the dissertation. Reason combines concepts into judgments, and no judgement is intrinsically true; its truth is based on something else. He states this form of the principle of sufficient reason as ‘If a judgement would express *knowledge*, it must have a sufficient ground, and on account of this property it receives the predicate *true. Truth* is thus the relation of a judgement to something distinct from it which is called its ground, and as we will soon see, even admits of a significant variety of forms’ (p. 100). He then recognizes four ways by which a judgement is grounded in something other than itself, and, thus, four kinds of truths: logical, empirical, transcendental, and metalogical. Just as he holds that the principle of sufficient reason of becoming articulates physical necessity, which is primarily the inevitability of an effect from a cause, this form of the principle of sufficient reason deals with ‘logical necessity’, the necessity of a true proposition following from a ground.

Schopenhauer's account of the four types of truths is brief and somewhat perfunctory, tending to be driven by neatly drawn systematic considerations. A judgement or proposition is logically or formally true if it is based simply on conceptual relations with another proposition. Thus the proposition ‘No P is S’ is logically true because it immediately follows from converting the proposition ‘No S is P’. A proposition, however, can also be materially true if it is inferred from a proposition with material content: an example of such a proposition is ‘No cats are insects’, which follows from the proposition ‘No insects are cats’. In his analysis of logical truth, Schopenhauer privileges classical Aristotelian categorical logic, ‘the whole science of syllogisms’, as stating the sum total of rules for applying the principle of sufficient reason to judgments, as formulating the canon of logical truth. Consequently, Schopenhauer recognizes that arguing, concluding, and inferring were the proper functions of the faculty of reason and that failure to reason in a way consistent with the rules of syllogistic reasoning demonstrates a defect in one's reason.[24]

Schopenhauer's account of empirical truth contains no examples of empirically true propositions. It is likely that he thought no examples were necessary. A proposition, he claims, is empirically true if it is grounded in experience. Since an empirically true proposition is not true by virtue of conceptual relations, it is materially true. (The proposition, ‘The cat is on the mat’, is true if only if, in fact, there is a cat on the mat.) Transcendentally true propositions, conversely, are those propositions that are grounded on the *a priori* forms of intuition; that is, those founded in the faculty of the understanding or pure sensibility. For example, the judgement ‘two straight lines do not enclose a space’ is grounded in the *a priori* form of space; ‘3 × 7 = 21’, is grounded in the *a priori* form of time; ‘Nothing happens without a cause’ is based on the *a priori* law of causality. Lastly, a proposition is metalogically true if it is grounded in the ‘laws of thought’, that is, in the law of identity, the law of contradiction, the law of the excluded middle, or the principle of sufficient reason of knowing itself. By discovering that it is impossible to think contrary to these laws, we recognize through reason that metalogical truths are conditions of the possibility of all thinking; ‘we then find that to think contrary to them is of as little avail as it is to move our limbs against the direction of their joints’ (p. 104). For example, Schopenhauer claims that the proposition, ‘matter is permanent’, is a metalogical truth, because we cannot think of matter as arising or passing away.

Principle of sufficient reason of being

The sixth chapter is Schopenhauer's analysis of the third class of objects, pure or non-empirical intuitions of space and time, and the form of the principle of sufficient reason governing these objects, which he calls the principle of sufficient reason of being. This chapter received few alterations. Other than systematically substituting ‘transcendental’ for ‘metaphysical’, he remained faithful to his original commitment to Kant's intuitionalist philosophy of mathematics, relating mathematical concepts to the pure forms of sensibility, that is, to space and time. Specifically, he held that space and time could be objects of non-empirical or *a priori* intuitions that enable us to know their nature better than considerations provided by either the understanding or reason. Kant, he argues, also held the thesis that the relations of position in space and succession in time are made intelligible only by means of intuition, ‘by explaining that the difference between the right and left glove absolutely cannot be made intelligible any other way than by means of intuition’ (p. 124).

As Schopenhauer had already argued in his earlier analysis of the principle of sufficient reason of becoming, space and time are the *a priori* forms of sensibility. As such space and time are transcendentally ideal, because they are subjectively imposed frameworks in which we must perceive the world. Yet, space and time are empirically real, since we intuit them as objective structures of experience, existing, as it were, independently of our consciousness. Schopenhauer holds that intuitions of space and time are pure or non-empirical, unlike our intuitions of real objects, our experience of spatio-temporal particulars like tables and chairs, which (as intuitive representations) are perceived *a posteriori*. Like both Kant and Newton, he accepts the claim that space and time are particular and, like Kant, he argues that space and time are constituted in such a way that every point determines and is determined by every other point. This relationship, he claimed, is called ‘position’ in space and ‘succession’ in time. The principle of sufficient reason of being states, therefore, that ‘parts of space and time determine one another’ (*ibid.*).

Following the lead of Kant, Schopenhauer claims that arithmetic is associated with the experience of sequential order in time, such as when we count a series of numbers in sequence. Each number presupposes the preceding numbers as the ground of its being. Employing Kant's infamous example of ‘7 + 5 = 12’, Schopenhauer rejects Herder's view that it is an identity statement. Rather, an identity statement would be ‘12 = 12’. Instead, ‘7 + 5 = 12’ is a synthetic *a priori* judgement, just as Kant maintained, because it is non-empirical, necessarily true, and informative: the concepts of 7 and 5 do not contain, as it were, the concept 12, as in an analytical statement, ‘All bodies are extended’, where the concept ‘body’ contains that of ‘extension’, and which says no more than ‘All bodies are bodies’. He argues that, unlike arithmetic, geometry deals with the non-empirical intuition of space, and as such, every part of space determines and is determined by every other part. Thus the proposition that ‘a triangle with two equal angles has equal subtending sides’ is something that can be grasped by intuition. Euclid's demonstration of the same, Schopenhauer maintains, simply provides the grounds for the truth of a judgement and fails to provide deep insight into spatial relationships and ‘the feeling is similar to that which is produced when someone pulls a rabbit out of a hat, and we cannot understand how the trick works’ (p. 128). Like all products of reason, Euclidean geometry lacks intuition's rich ability to apprehend the world.

Principle of sufficient reason of acting

The seventh chapter, Schopenhauer's analysis of the principle of sufficient reason of acting or ‘the law of motivation’, received significant alterations in order to accommodate his metaphysics of will. Schopenhauer holds that the class of objects governed by this principle is unique, since it is a class with a single member for each person, the subject of willing, which is cognized only in time (p. 140). After reiterating his hallmark claim that the subject of cognition is never an object of cognition, Schopenhauer asserts that the subjects of cognition and willing are identical. The identity of the subjects of cognition and willing is something ‘immediately given’, and this identity is denoted by the word ‘I’.[25] This identity is inexplicable, eluding all forms of the principle of sufficient reason, whose scope of application is confined to objects of cognition. Retaining a remark from the dissertation, Schopenhauer writes, ‘But whoever truly realizes the inexplicability of this identity will with me call it the miracle *par excellence*’ (p. 136). A short five years later, he claims that *The World as Will and Representation* is ‘to some degree, an explanation of this [miracle]’.[26]

Schopenhauer also recognizes another ‘miracle *par excellence*’ in the first edition of his principal work, a miracle that he did not state in either edition of *On the Fourfold Root*. The statement of this ‘miracle’ moved him to acknowledge a new variety of truth that extended his classification beyond logical, empirical, transcendental, and metalogical truths. This new truth, that one's body and will are identical, he called the ‘*philosophical truth par excellence*’.[27] In 1813, however, he was not prepared to acknowledge this truth, just as he was unwilling to give any credence to Kant's notion of the thing in itself. This truth would lead him to argue against the traditional thesis that volitions are prior to and causally produced bodily movements. Willing and acting are one and the same, he held, and we only distinguish between the two in reflection: ‘Every true act of his will is immediately and inevitably a movement of his body as well… An act of will and an act of the body are not two different states cognized objectively, linked together in a causal chain, they do not stand in a relation of cause and effect; they are one and the same thing, only given in two entirely different ways: in one case immediately and in the other case to the understanding in intuition.’[28]

In his dissertation, Schopenhauer does not recognize the identity of willing and acting: ‘*Acting* is not willing, but the effect of willing when it becomes causal’ (p. 185). Desires are also not instances of willing, unless they cause an action. Rather in the dissertation, the cause of an action is a decision, something imparting causality to a particular desire. Schopenhauer provides the following account of an action: ‘If a person P performed action A, then P had a motive M to do A, and M is a desire to do A, one that was prompted by decision D to do A.’ Here Schopenhauer views the decision as making desire causally effective and a matter of willing. In this early theory of action, he also views the decision itself as an expression of a person's character, and to provide more content to this account, Schopenhauer employs Kant's distinction between a person's empirical and intelligible characters. The empirical character is expressed as the general pattern of a person's behaviour, and this character is discovered by reflecting on the sum total of a person's actions. Schopenhauer argues, moreover, that the unity and unalterability of a person's conduct suggests that it is the appearance of something completely unknowable, lying outside of time; that it points to, as it were, a permanent state of the subject of willing. But after making this remark, Schopenhauer explains why he said ‘as it were’, pointing out that ‘state’ and ‘permanent’ have application only within the temporal framework; technically there is no means of speaking about anything outside of time. For this reason, he also writes in a parenthetical remark that Kant's intelligible character might ‘more be called unintelligible’ (p. 188).

Although Schopenhauer would later regard Kant's distinction between the empirical and intelligible characters to be as significant as his distinction between appearances and things in themselves, in eliminating § 46 ‘Motive, decisions, empirical and intelligible character’ from the second edition of *On the Fourfold Root*, Schopenhauer carefully removed any passages inconsistent with his claim that willing and acting are identical.[29] Changing the title of his earlier § 47, ‘Causality of the will on cognition’, to § 44 ‘Influence of will on cognition’, he claims that ‘The influence that will exercises on cognition is not based on causality, strictly speaking, but on the identity of the cognizing with the willing subject’ (p. 138). Whereas in the first edition he had said that willing itself is given immediately to our inner sense and is impossible to define or describe, in the second he notes that ‘Precisely because the subject of willing is immediately given in self-consciousness, what willing is cannot be further defined or described; moreover, it is the most immediate of all of our cognitions, and indeed, the fact that it is immediate must ultimately cast light on all remaining cognitions, which are mediated’ (p. 136). By 1847, however, he had long known that this immediate awareness is the key for his viewing will as the essence of all appearances.

In light of these changes, Schopenhauer also revised the earlier theory of action. To articulate his mature view, he directs his readers to his prize essay, ‘On the freedom of the human will’, where he had directly integrated motives into a general account of the types of causality expressed within the world as appearance.[30] Everything in the world, he argues, follows from a sufficient ground and, among different types of beings, different causal relations prevail. Among lifeless or inorganic beings, the specific causal relationship is between a physical, mechanical, or chemical cause and some effect. Among living beings, in plants, stimuli, such as water, heat, and light, lead to a response such as growth, and in animals, both human and non-human, the causal relation is motivation, which leads to a willed action, causality functioning through cognition. In any change, moreover, there are two necessary factors. There is some original and inherent force attributed to the being upon which some causal influence is exercised, and there is some cause that occasions the manifestation of the force. He also holds that these forces are outside the scope of the principle of sufficient reason, underlying as it were, all causal relationships, but not subject to it. Gravity, electricity, and magnetism are the types of forces prevailing in non-living beings and these types of causes he calls 'causes in the narrowest sense'. Vital force is that which is expressed in plant life, and stimulus is the type of cause prevailing therein. Lastly, character is the force in animal life, and the types of causes operating therein are motives. Consequently, an action becomes the manifestation of an animal's character in reaction to a motive. All forces, including the human character, represent the endpoints of explanation:

> Now just as this is the case with causes in the narrowest sense and with stimuli, it is no less the case with *motives* – given that motivation is not essentially different from causality, but merely a kind of it, namely causality that proceeds through the medium of cognition. So here too the cause calls forth only the manifestation of a force that is not to be traced back further to causes, and is consequently not to be further explained – a force, which is here called *will*.[31]

Despite the significant alterations found in his second account of the fourth form of the principle of sufficient reason, Schopenhauer uses in both editions the same thin argument for the *a priori* nature of the principle of sufficient reason of acting, the so-called 'law of motivation':

> With every observed decision of others, as well as our own, we regard ourselves as justified in asking, 'Why?'; i.e. we presume it to be necessary that there was something preceding it, from which it followed, which we call the ground, or more precisely, the motive for the action now resulting. It is as inconceivable that there can be an action without a motive as that there can be movement of an inanimate body without a push or pull. (pp. 136–7)

By also claiming that '*motivation is causality seen from within*', Schopenhauer directly relates the law of motivation to the law of causality, and he calls this insight 'the cornerstone of my whole metaphysics' (p. 138).

General remarks and results

The eighth chapter concludes both editions of *On the Fourfold Root*. In the second edition, however, Schopenhauer drops § 50 'Transition', § 51 'Other principles of the division of the four types of grounds', § 56 'Confirmation from languages', and § 58 'Apology concerning imagination and reason'. He adds a new § 49 'Necessity', in which he argues that the principle of sufficient reason is the basis of all necessity: 'For *necessity* has no other genuine and clear sense than the inevitability of the consequent when the ground is posited. Therefore any necessity is *conditioned*; thus, absolute, i.e. unconditioned necessity is a contradiction in terms [*contradictio in adjecto*]. For *being necessary* can never mean anything other than following from a given ground' (p. 146). In this section he describes the type of necessity expressed by each of the four specific instances of the principle of sufficient reason, namely, physical necessity expressed by the law of causality, logical necessity expressed by the principle of sufficient reason of knowing, mathematical necessity expressed by the principle of sufficient reason of being and, expressed by the law of motivation,

> moral necessity, according to which any human being, and even any animal, upon the appearance of a motive, must carry out the only action which is in conformity with his innate and inalterable character, which action now follows as inevitably as any other effect from a cause, even if it is not as easy to predict as anything else because of the difficulty of fathoming and completely knowing the individual empirical character and its allotted sphere of knowledge. (p. 147)

As the first section of this chapter, he adds from the first edition the old § 52 'The systematic order', but numbered now as § 46.

Just as he had arranged *The World as Will and Representation* for ease of comprehension, instead of by systematic order, he also does so with *On the*

Fourfold Root. He claims that had he presented the subject systematically, he would have discussed the principle of sufficient reason of being first, beginning with its application to time, because time is the simplest scheme for all remaining forms of the principle. Next, he would have considered its application to space, and with this, the 'law of causality'; next the law of motivation; and finally the principle of sufficient reason of knowing, which deals with 'representations of representations' or concepts (p. 143).[32]

Schopenhauer concludes both editions with a statement of the work's two main results, ending with an appeal to both of the laws of homogeneity and specification, the beginning points of his reflection. He identifies as the first result the finding that the principle of sufficient reason is the general expression for four different ground and consequent relations, each of which rests on different *a priori* principles. The law of homogeneity requires the assumption that these four principles, which are discovered through the law of specification, have a common root and a single common expression; namely, that nothing is without a ground or reason for why it is rather than it is not. This common expression, moreover, signifies the unity of the cognitive faculty. The second result is closely related to the first. The four specific forms of the principle of sufficient reason, which arise from a single characteristic of consciousness, expressed in faculties of sensibility, understanding and reason, do not license speaking of a ground *per se*, as something pure and simple.

Schopenhauer finds the first result to entail that when philosophers base some claim on the principle of sufficient reason, they should specify the type of ground they mean. Not to do so only leads to confusion. Even Kant was not immune to such confusion, and he ignored his own profound insight that 'the contingency of things is *itself only phenomenal* and can lead to no other than the empirical regress that determines phenomena', by referring to the thing in itself variously, as the 'ground', 'reason', and 'intelligible cause' of phenomena (p. 151). Schopenhauer adds that anyone familiar with more recent philosophy knows that philosophers after Kant have followed Kant in these excesses, employing the concepts of the ground and consequent, *principium* and *principatum*, in a fully transcendent sense, speaking about something that is beyond the bounds of all possible experience. He explains that the principle of sufficient reason only applies *in* the world, i.e. within the totality of all possible experience and *to* the world, which Plato recognized as that which is forever coming to be and perishing, but never really being at all, the world which Christianity appropriately referred to as the temporal.

Schopenhauer relates the second result to the first. Showing that the four forms of the principle of sufficient reason stem from our cognitive capacities and that they can be summarized as a single principle, does not entail that this principle refers to some simple, single, absolute ground. To think that this follows would be like thinking that there is something like a triangle in general, something over and above equilateral, isosceles, or scalene triangles. Although one can formulate the concept of a ground in general, just as one conceptualizes a triangle in general, there are no possible objects denoted by these concepts, which are simply empty abstractions produced by discursive thought. To think otherwise is to be a realist, falsely believing that all concepts denote objects. In this matter, Schopenhauer declared allegiance with the nominalists: these concepts have no objective reference and exist only as names.

On Vision and Colours

Genesis of the work

Had it not been for his deep reverence for Johann Wolfgang von Goethe, it is unlikely that Schopenhauer would have written *On Vision and Colours.* He stood in awe of Goethe, who was frequently a participant at Johanna Schopenhauer's tea parties in Weimar. Perhaps due to Schopenhauer's mother's warning him about her quarrelsome and moody son, Goethe virtually ignored Schopenhauer's attendance at these parties. But in the late autumn of 1813, Goethe made a point of thanking Schopenhauer for sending him a copy of *On the Fourfold Root*, and he congratulated the philosopher for receiving his PhD. Goethe's cordiality toward the newly minted Doctor of Philosophy is likely to have resulted from the former's sense of affinity of thought, one that could prove useful for promoting his own poorly received colour theory. Schopenhauer had argued in his dissertation that geometrical proofs lacked the type of conviction provided by intuition (p. 128). Goethe was also sceptical of the purely conceptual, favouring the intuitive. He sensed a potential ally for his own colour theory, which was articulated in *On the Theory of Colours* (1810), a work in which he took considerable pride. Schopenhauer and Goethe met at least seven times from 29 November 1813 through 3 April 1814 to discuss colour theory and other topics. Many years later, Schopenhauer would introduce himself, in English, to the British translator of Goethe's *On the Theory of Colours*, Charles Lock Eastlake, as 'Goethes [*sic*] personal scholar and first publicly avowed proselyte [for Goethe's colour theory]. In the year 1813 and 14 he instructed me personally, and exhibited the more compound and difficult experiments himself to me.'[33]

Schopenhauer, however, was no simple proselyte, and Goethe sensed Schopenhauer's character after a few meetings, penning the following lines with Schopenhauer in mind: 'I would like to bear the teacher's burden still longer/If only pupils did not at once become teachers.'[34] Later Goethe would consider Schopenhauer an opponent of his colour theory: 'Dr Schopenhauer is a significant thinker whom I induced to take up my theory of colours…This young man, proceeding from my perspective, has become my opponent.'[35] Nevertheless, throughout his life Schopenhauer promoted Goethe's colour theory, and Schopenhauer would continue to decry what he saw as the unfair and scandalous treatment of his hero's work.

After he had tried and failed to gain Goethe's blessings for his work and his aid in securing a publisher, Schopenhauer's essay on colour theory appeared in May 1816. An anonymous, negative review appeared in the *Leipziger Litteratur-Zeitung,* a journal that had negatively reviewed Goethe's *On the Theory of Colours* a few years earlier.[36] Two years later Schopenhauer would compare the effect caused by the essay to that of tossing a rock into a bog – no ripples.[37]

Although *On Vision and Colours* failed to gain recognition as 'the first theory of colour, the first in the history of science', Schopenhauer's confidence in the truth of his theory never wavered.[38] Years later, after his academic career had failed, and all of his earlier works were ignored, he attempted to appeal to readers outside of Germany by publishing a Latin recast of his colour theory as '*Commentatio exponens Theoriam Colorum Physiologicam eandemque primariam*', which appeared in Vol. 3 of *Scriptores Ophthalmologici minores*, edited by the Berlin *Privatdozent,* Justus Wilhelm Martin Radius. Yet this attempt to gain a hearing from the broader, learned world was like a rock that had completely missed the bog. There were no ripples; not even the dull plunk of a negative review. Yet Schopenhauer still would try. In 1851 he published the Goethean-titled essay ‘On the Theory of Colours’, in the second volume of *Parerga and Paralipomena*, and thirty-eight years after the first edition, he published the second edition of *On Vision and Colours* with the same Leipzig publisher, Johann Friedrich Hartknoch. Like the first edition, this new edition attracted a single review. This time the review was highly favourable, because it was authored by Schopenhauer's devoted follower and editor of his first collected works, Julius Frauenstädt.[39]

Differences between editions

The differences between the two editions of *On Vision and Colours* are relatively minor. As was his practice for all new editions of his books, Schopenhauer adds a preface to the second edition, and he also includes references to supporting discussions in his other works. He makes changes in his vocabulary for greater precision. Whereas he wrote of the ‘activity of the eye’ in the first edition, this is changed in the second to ‘activity of the retina’. He also removes needlessly obscuring jargon. Just as he had changed ‘the immediate object’ to ‘the body’ in the second edition of *On the Fourfold Root*, he does likewise in this essay. He also notes that in the first chapter, ‘On vision’, his account of cognition ‘is aphoristic and in a simple outline’ (p. 212), and that a comprehensive account is to be found in the second edition of *On the Fourfold Root.* He drops from the same passage the worry that without familiarity with that work, ‘many will believe that for cognition I posit that the object is related to the subject as cause is to effect, an opinion that appears to me just as confused as the opposite, which makes the subject of cognition the cause of the object, and is the most recent form of idealism’ (p. 289). And if this was an oblique reference to Fichte, he adds a reference to Schelling in the second edition to clarify his earlier reference to the abuses the concept of polarity received in the natural philosophy ‘of recent times’ (p. 237). He drops the original and brief § 7, ‘A Comparison’, where he compares Chladni's acoustic figures to his account of the qualitatively divided activity of the eye.

Schopenhauer also removes citations to outdated scientific works and adds those to more recent works. He speaks more frankly about his differences with Goethe, but quietly removes a topic about which they had disagreed, the origin of violet. And if Schopenhauer writes more frankly about Goethe's colour theory in the second edition, he also adds more praise for his mentor's work and decries its continuing neglect, something he predicts will be an embarrassment to his age, saying that ‘the day of justice for Goethe's colour theory cannot be held off’ (p. 286).

The Second edition

The ‘Preface to the Second Edition’ of *On Vision and Colours* is typical of those Schopenhauer composed for the new editions of his books. He notes that after forty years his faith in the truth of his original views is not simply unshaken, but better grounded through years of reflection. He chides his contemporaries for taking so long to require a new edition of his work. Just as he had in the ‘Preface to the Second Edition’ of *On the Fourfold Root*, he refers to the two voices expressed in this new edition, that of the younger man and that of the older, a difference he believes sensitive readers should clearly discern. He mentions that he has not simply omitted material incidental to the subject, but has in fact improved the essay through his additions. Oddly, in a preface written so many years after the first edition, he mentions that while he wrote the essay in 1815, it did not appear until Easter 1816; a delay he attributes to Goethe's taking the manuscript on his tour of the Rhine. Schopenhauer does not explain the significance of this remark, nor does he reveal that during this time he was corresponding with Goethe, a correspondence which, along with the manuscript of *On Vision and Colours*, convinced the elder that the young man had become his opponent.

In the Preface Schopenhauer also announces his support of Goethe's colour theory, claiming that he is just as prepared ‘to teach Goethean colour theory among Newtonians, as…to teach ascetic morals among modern Protestants, Jews, and optimists’ (p. 202). This work is more natural science than philosophy, and so he feels compelled to state the philosophical significance of the essay. The subjective nature of colour supports Kant's transcendental idealism and helps demonstrate the naïve realism of ‘some chemists and physiologists [who] quite seriously imagine that they are able to explain the being of things thoroughly without any transcendental philosophy' (p. 203). Lastly, he refers to the Latin work on colour theory and why he published 'On the Theory of Colour' in *Parerga and Paralipomena*, some passages from which he also includes in this essay.[40]

The introduction announces that *On Vision and Colours* presents a new theory of colour. Schopenhauer makes it clear that the consideration of physiological colours, 'the appearances of colour that pertain only to the eye', is his main concern, and he highlights his tremendous debt to Goethe (pp. 207–8). He credits Goethe both for showing problems with Newton's view, thus paving the way to Schopenhauer's own theory, and for assembling a rich set of data about colours, material which became data for Schopenhauer's colour theory. Although Goethe had assembled a systematic presentation of facts, Schopenhauer observes that

> all facts standing apart from a definite range of the realm of experience, even if they are completely associated, are not truly a science until knowledge of their innermost essence has united them under a general concept that comprises and contains everything that can be found only in those facts, a concept to which there are other subordinate concepts, by means of which one can immediately arrive at knowledge and a determination of each individual fact. (p. 208)[41]

Schopenhauer mentions a remark that he thought might have caused Goethe to consider him to be his opponent; 'in particular we will encounter a point at which Goethe, who on the whole was perfectly correct, still erred, and Newton, who on the whole was completely wrong, pronounced the truth to a certain extent – although actually more in words than in sense, and even not entirely so' (p. 210). The issue concerned the production of white from colours, the topic of § 10 in the second chapter. Lastly, the introduction sets the stage for the chapter on vision, where his intent is to show that colours are not intrinsic properties of objects, but pertain to the perceiver alone. In this regard, Schopenhauer calls colours 'subjective', belonging to the perceiver and not 'objective', belonging to the object of experience. As he notes at the end of the first chapter, 'colour is and remains an affection of the eye: the object is intuited merely as its cause: but the colour itself is only the effect, a state brought about in the eye, and as such it is independent of the object' (p. 224).

In the second edition, Schopenhauer makes it clear that he now considers the chapter 'On vision' to be but a 'forerunner' to his work in § 21 of *On the Fourfold Root*. Indeed, Schopenhauer calls his work in this chapter fragmentary and incomplete, and he refers his readers to *On the Fourfold Root* to supplement his analysis of vision as he does to other supporting discussions in *The World as Will and Representation* and *The Two Fundamental Problems of Ethics.* Thus he claims that treatment of vision occurs in this essay primarily to bring his reader to 'the genuine conviction that colours, which appear to him to clothe objects, are entirely in his eyes alone' (p. 211). In this chapter Schopenhauer also makes his characteristic distinctions among sensibility, understanding, and reason. He claims, too, that the intuition of objects comprising the external world is a function of the understanding, mounting this argument on the considerable differences between sensations and the apprehension of an external world in which spatio-temporal objects stand in causal relations to other similar objects.

Schopenhauer had more formal training in the sciences, especially in biology, than he had in philosophy, and so he often describes his theory in physiological terms. The result of this is that at times he combines his transcendental standpoint with an empirical materialist standpoint: 'For intuition, i.e. the apprehension of an objective material world filling space in its three dimensions, arises through the understanding, for the understanding, in the understanding, which like the forms of space and time lying at its basis, is the function of the brain' (p. 224). He also writes about the optical nerve being influenced by light and the nerve of the Labyrinth and of the Cochlea receiving vibrations of air, as if there is some external source of sensations. This tendency to combine a transcendental with an empirical, materialist account of cognition is characteristic of Schopenhauer, especially when the point is not to establish the *a priori* nature of the forms of cognition, but to explain straightforwardly the perception of objects. Indeed, Schopenhauer even describes how young infants begin to make sense out of sensations, which he views as learning to apprehend the external world:

> In the first weeks of life the child receives sensations with all senses, but it intuits nothing, it apprehends nothing; therefore, it stares stupidly at the world. Soon, however, it begins to learn how to use the understanding and to apply the law of causality, of which it is aware prior to all experience, and to connect it with the forms of all cognition, space and time, which are likewise given *a priori*; thus it moves from sensation to intuition, to apprehension; and henceforth it gazes on the world with clever, intelligent eyes. (p. 215)

Moreover, because Schopenhauer concentrates on ‘physiological colours’, in distinction to chemical and physical colours, his analysis of colours centres on the activity of the retina.

From an account of the development of the apprehension of an external world, Schopenhauer moves to a discussion of a number of examples illustrating the difference between illusion and error, which he views as resulting either from abnormal conditions of the senses or from non-typical presentations of sensory data. He views illusion as a function of the understanding and error as a function of reason. He provides an example. Looking at an object cross-eyed or touching a ball with the middle finger crossed over the index finger produce in the first case the apprehension of two objects and in the second double touch, the apprehension of two balls. Reason can explain the deception, but it nevertheless persists:

> Such an illusion can certainly be accounted for by reason, but not done away with for the understanding, which is non-rational precisely because it is pure understanding. Here is what I mean: with such an illusion, intentionally brought about, we *know* very well, in the abstract [*in abstracto*] or for *reason*, that, e.g. only *one* object is present, although with crossed eyes and crossed fingers, we see and touch two, or we know that two are present although we see only *one*; however, despite this abstract cognition the illusion itself still remains in place. For understanding and sensibility are intractable to principles of reason, i.e. simply non-rational. (p. 220)

Just as, for Schopenhauer, the intuition of the external world is a function of the brain, so, too, he considers colours as functions of a thin nerve membrane at the back of the eye, the retina, the modified activities of which are the colours that appear to clothe objects:

> If the understanding transforms sensation into intuition, then of course this effect is referred to and assigned a cause, and light and colour are attributed to the body producing the effect as qualities, i.e. types of effect. The body is still recognized only as that which brought forth this effect. ‘The body is red’ means that in the eyes it produces the colour red. Generally, ‘to be’ is synonymous with ‘to act’: thus even in German, very strikingly and with unconscious profundity, everything that *is* is called *actual* [*wirklich*], i.e., acting. (p. 224)

The chapter ‘On colours’ begins by announcing the subjective turn of Schopenhauer's colour theory. He attributes a failing to Goethe and Newton, both of whom proceeded from the objective side. A thorough account of colour, Schopenhauer argues, must proceed from the idea that lightness, darkness, and colour are in the strictest sense immediately-felt modifications of the retina and as such are physiological phenomena. Only by investigating the effect can one derive data for the discovery of the cause, and only by considering colour as a specific sensation in the eye, can one discover data to assess Goethe's and Newton's objective theories of colour, an assessment that Schopenhauer uses to speak favourably of Goethe's and not Newton's theory:

> Consistent with all of this, one will find that my theory, which considers colour only in itself,…already provides data *a priori* for an assessment of Newtonian and Goethean theory of colour as objective, i.e., the theory of external causes that excite such sensation in the eye; and from this it will result that everything speaks for the Goethean theory and against the Newtonian. – Thus only after consideration of colour as such, i.e., as a specific sensation in the eye, can we undertake the completely different consideration of the external causes of those particular modifications of the sensation of light, i.e., the consideration of those colours which Goethe quite correctly divided into physical and chemical. (p. 226)

Yet this statement in favour of Goethe belies the way that Schopenhauer's subjective turn radically distanced his view from that of his mentor. Goethe viewed white or light and black or darkness as primary phenomena – in Schopenhauer's term, *Urphänomene*, ‘urphenomena’, phenomena that served to explain all colour phenomena but which themselves were not capable of further explanation. Colours themselves were something shadow-like or cloudy, a σκιερόν (*skieron*). Aware that a mixture of black and white produced gray, Goethe argued that with the aid of a turbid medium, such as fog, smoke, clouds, flint glass, or the like, the interplay of polarities of light and darkness produced colour phenomena. Gazing at darkness through a turbid medium with a light source before it produced blue; whereas, looking at a turbid medium with a light source behind it yielded yellow. From the intensification of these opposites, blue and yellow, all other colours are derived, Goethe held, through their union. From these grounds, Goethe's theory recognized six primary colours, compared to Newton's seven, with the intensification of blue yielding reddish blue, its intensification in turn yielding purple, and the intensification of yellow yielding yellowish red, while the union of yellow and blue produced green.[42]

Schopenhauer had problems with Goethe's realism, which led Goethe to view light and darkness as urphenomena. Consequently Schopenhauer provides a grounding explanation of Goethe's alleged urphenomena by turning to physiological colours and the seeing eye. Lightness or white, darkness or black, and colours are modifications of the eye. Lightness or white is the full activity of the retina. Darkness or black is the inactivity of the retina; whereas, colour is the qualitatively divided activity of the retina. Consequently, ‘The true urphenomenon is only the retina's organic capacity to divide the activity of its nerves into two qualitatively opposed halves, now equal, now unequal, and have them come to the fore successively’ (pp. 269–70). Thus Schopenhauer reduces Goethe's urphenomena to that which merely stimulates the division of the retina's activity.

Schopenhauer's theory deviates from Goethe's doctrines in another significant way: Schopenhauer also accuses Goethe of the same failing as Newton. Both Goethe and Newton concentrate on the cause of the sensation of colour without examining its effect, that is, colour as a physiological phenomenon. Newton did so by viewing colours as epiphenomena, subjective correlates of the mechanical properties of light rays, and Goethe did so by focusing on the role of physical media as light moved from its source to the seeing eye. Although Schopenhauer accepts Goethe's claims that white light is homogeneous, that there are six and not seven primary colours, and that colour necessarily includes darkness, he also agrees with Newton's claim that colour is a divisional process. To be sure, by claiming that colour is a divisional process of the retina, Schopenhauer denies that it is a divisional process of light rays (as Newton held), but this concession did little to brighten Goethe's attitude to his student's theory. This was especially the case given Schopenhauer's claim that white can be produced by colours, and his subsequent claim that Goethe's unconditional denial of the production of white from colours was due to the fact that ‘he constantly had erroneous Newtonian theory in mind, and against this theory he correctly maintained that the aggregate of colours does not lead to light since each colour is related to both darkness and light’ (p. 251).[43]

Schopenhauer attributes considerable significance to his ability to show that colours can be described in terms of definite numerical fractions, and it is this innovation that allows him to demonstrate the production of white from colours. By viewing colour as the qualitatively divided activity of the retina, with black or the inactivity of the retina equalling zero, and white or the full activity of the retina equalling one, Schopenhauer claims that one of the primary colours and its complementary colour equals one or white. In his letter to Eastlake, Schopenhauer emphasized the significance of this discovery:

> if, bearing in mind the numerical *fractions* (of the activity of the Retina) by which I express the 6 chief colours; You contemplate these colours singly, then You will find that only by this, and by no other theory upon earth, You come to understand the peculiar sensation, which every colour produces in your eye, and thereby get an insight into the very essence of every colour, and of colour in general. Likewise my theory alone gives the true sense in which the notion of *complementary* colours is to be taken, viz: as having no reference to *light*, *but to the Retina*, and not being a redintegration [*sic*] of white light, but of the full action of the Retina, by which every colour undergoes a *bipartition*

> either in yellow and violet
>
> ¾ ¼
>
> or in orange and blue
>
> ⅔ ⅓
>
> or in red and green
>
> ½ ½
>
> This is in short the great mystery[44]

Schopenhauer closes the essay with § 14 ‘Some Additions to Goethe's Theory of the Origin of the Physical Colours’, where he delivers what the title suggests. He continues to decry the plagiarism of his work by Professor Rosas, whom he had already condemned earlier, and he complains about the lack of reception of his and Goethe's colour theory by his contemporaries. He praises Goethe and condemns Newton, prophesying the ultimate success of the former and the decline of the latter, something that expresses one of Schopenhauer's fundamental articles of faith, namely, that ultimately the truth will be recognized: ‘Meanwhile, the day of justice for Goethe's colour theory cannot be held off, and then once again the saying of *Helvétius* will be affirmed: “merit is like powder, the more it is compacted, the stronger the explosion”…and then the drama, so frequently repeated in the history of literature, will be performed anew and brought to its conclusion’ (p. 286).[45]

The place of *On Vision and Colours* in Schopenhauer's oeuvre

Schopenhauer was ambivalent about the relationship between *On Vision and Colours* and his philosophical works. In ‘Preface to the First Edition’ of *The World as Will and Representation*, he required his readers to study the first chapter ‘On vision’, saying that it would have been given word for word in his principal work, had he not been disinclined to repeat himself.[46] But by the time of the second edition of *On the Fourfold Root*, this reading was no longer required. He included in the second edition § 21, ‘Apriority of the concept of causality. – Intellectual basis of empirical intuition – The understanding’, an elaboration of the physiological arguments for the intellectual nature of intuition first given in ‘On vision’.[47]

Schopenhauer was also inclined to advise his acquaintances concerning the best way to read his books in order to fully grasp his philosophy. He was also fond of saying that a fundamental understanding of his philosophy required reading every line he wrote.[48] Yet he told one of his early followers, Ernst Otto Lindner, that *On Vision and Colours* was not required reading, but that it was simply good to read with his other books.[49] Toward the end of his life, however, when Schopenhauer approached the publisher of *The World as Will and Representation*, F. A. Brockhaus, about the prospects of a collected edition of his works, he included *On Vision and Colours* as part of the edition.[50] Still later, however, when he drafted the content for a collected edition, he excluded the essay, saying, ‘The theory of colours is on its own’.[51]

Despite Schopenhauer's ambivalence, *On Vision and Colours* is an important contribution to colour theory from an idealistic point of view. It also casts light on Schopenhauer's philosophical development. The first chapter, ‘On vision’, presents for the first time Schopenhauer's physiological arguments for the intellectual nature of perception; it illustrates his understanding of theory construction, as he sought to give theoretical grounding to Goethe's colour theory. Moreover, it can serve as a means for more deeply understanding the way Schopenhauer distinguished philosophy from the natural sciences. It records for the first time, Schopenhauer's use of the term ‘urphenomenon’, a concept that would play a vital role in his ethics and in his statement of philosophical methodology.[52]

On Will in Nature

Genesis of the work

Had *The World as Will and Representation* gained a readership sufficient to justify a second edition, it is unlikely that this work would have appeared. Immediately after Schopenhauer's principal work appeared in December 1818, he anticipated that a second edition would be required ten years afterwards. But when he contacted his publisher, almost ten years to the date of the publication of his principal work, his hopes were dashed. He was told that out of the original printing of 750 copies 150 remained on the shelves and it could not be determined how many copies were sold, because a considerable number had been scrapped.[53] A second edition was out of the question. Schopenhauer would blame this failure on the prevailing 'Hegel*gloria*' of the time.[54]

Yet Schopenhauer had been assiduously preparing for this second edition, and he had been focusing specifically on how the natural sciences confirmed his philosophy. To draw a readership sufficient to justify a new edition of *The World as Will and Representation*, Schopenhauer decided to publish his observations on the natural sciences. The subtitle of *On Will in Nature* reveals his strategy: *A Discussion of the Corroboration that the Author's Philosophy has Received from the Empirical Sciences Since Its Appearance*. By demonstrating how the sciences confirmed his philosophy, he hoped that which had been confirmed would be read. Unable to convince the publisher of his principal work, F. A. Brockhaus, to accept *On Will in Nature*, Schopenhauer managed to convince the Frankfurt publisher Siegmund Schmerber to publish 500 copies of *On Will in Nature*, and it appeared in March 1836. Schopenhauer waived his author's honorarium for the book.

Schopenhauer's strategy failed. Initially *On Will in Nature* drew a single, unfavourable, review, signed simply 'H', in the *Repertorium der gesammten deutschen Litteratur*, 1836.

The reviewer, later a professor of philosophy in Leipzig, one Gustav Hartenstein, was a former student of one of Schopenhauer's critics, Johann Friedrich Herbart. Hartenstein shared his teacher's assessment of Schopenhauer's philosophy, namely, that Schopenhauer's fundamental ideas could already be found in Fichte and Schelling. Hartenstein also successfully predicted that this small work on the philosophy of nature would fail to draw an audience to Schopenhauer's principal work. Five years later, a negative review of this book and *The Two Fundamental Problems of Ethics* appeared in the *Hallische Jahrbücher für deutsche Wissenschaft und Kunst* (July 1841). The anonymous reviewer, '*Spiritus asper*', was none other than Friedrich Wilhelm Carové, Hegel's former *Repetent*, or teaching assistant, at Berlin.

Differences between editions

Of the three works found in this volume, *On Will in Nature* received the least alteration from its first edition. As Schopenhauer mentions in the Preface, written for the second edition (1854), he found little to retract from the first edition. The reason for this is somewhat straightforward. Unlike *On the Fourfold Root* and *On Vision and Colours*, *On Will in Nature* appeared well after he had set the basic ideas of his philosophy in *The World as Will and Representation.* Moreover, *On Will in Nature* was intended to demonstrate how the empirical sciences confirmed his metaphysics. It was also written after the critical reviews of his principal work, where recurrent themes were that his philosophy merely was an epigone of that of Fichte and Schelling, that his metaphysics was fraught with contradictions, and that the ascetic results of his ethics were paradoxical. While Schopenhauer never directly addressed the first two of these criticisms and only briefly addressed the last in the first edition of *On Will in Nature*, he also composed this work with those criticisms in mind.

The most dramatic alteration in the second edition concerns his use of passages drawn from two books by Joachim Dietrich Brandis, a physician to the King of Denmark and once a professor at Kiel. Schopenhauer considered Brandis' work a significant confirmation of his metaphysics, because Brandis recognized an unconscious will as the primary source for all vital functions. Schopenhauer thought himself justified in claiming Brandis' works as confirmation of his philosophy, since at the time of the first edition he thought that Brandis was unfamiliar with his philosophy. But long before the second edition, he discovered that Brandis actually had owned his principal work. So instead of omitting his citations of Brandis, he retained most of them, using this as an opportunity to berate Brandis for plagiarism and to bemoan the reception of his own thought, believing that 'The unwarranted obscurity that an author such as I have endured for a long time emboldens such people to appropriate the fundamental ideas of such authors without naming them' (p. 335).[55]

Most of the changes between editions involve eliminating some outdated sources and adding references to some new sources. One of the more significant of the updating of sources is a lengthy footnote in the chapter 'Sinology', in which he lists the literature on Buddhism that he owned and with which he was familiar.[56]

The second edition

The second edition includes a Preface of the sort found in those of Schopenhauer's other books that received a new edition after the dawn of his fame in the 1850s. He gives thanks for the opportunity to improve the work, berates his contemporaries – especially for their lack of knowledge of Kant, accusing them of philosophizing as if the *Critique of Pure Reason* was written and remained on the moon. He decries the realism and materialism of the men of the 'crucible and retort', noting that 'one can be a consummate zoologist and be able to rattle off all sixty species of monkeys, and yet, if one has learned nothing more than, perhaps, his catechism, taken on the whole he is an ignoramus, to be counted among the rabble' (p. 306). He announces 'depressing news' for philosophy professors; namely, that their Caspar Hauser, 'whom for nearly forty years they so carefully shut off from light and air, so securely walled up that no sound could betray his existence to the world – their Caspar Hauser has escaped! has escaped and is on the loose – Some even believe he is a prince' (p. 307). Schopenhauer then immediately follows with a line Nietzsche would mock, '*legor et legar*' [I am read and I will be read].[57]

Although the Preface is rather standard fare for prefaces to new editions, it differs from those others in that Schopenhauer provides a concise description of the content of the book, and attributes a special significance to the work itself:

> For proceeding from the purely empirical, from the observations of unprejudiced scientists who follow the path of their particular science, I immediately arrive here at the core of my metaphysics, indicating the points of contact of this metaphysics with the natural sciences, and

> thus providing, as it were, an arithmetic proof of my fundamental dogma, which in this way is grounded more specifically and in more detail, just as it is understood more clearly, more comprehensibly, and more precisely than anywhere else. (p. 305)

Other than altering his first footnote and adding a quote from Kant, Schopenhauer leaves the ‘Introduction’ unchanged in the second edition. Schopenhauer is keen to distance himself from Schelling and Fichte, to both of whom he refers. And, for the first time in his writings, he publicly berates Hegel in unrestrained terms, referring to Hegel's philosophy of ‘absolute nonsense’ and recommending as a crest for Hegel's work a cuttlefish enveloped by a dense cloud of ink, with the motto ‘protected by my obscurity’ (p. 328).

To distance himself from Schelling and Fichte in particular, Schopenhauer asserts that the end point of scientific explanations of the world discovered just ‘what my theory has presented as the metaphysical point from which experience in general is to be explained’ (p. 323). To distance himself further from Fichte and Schelling, he also emphasizes his commitment to Kant's distinction between appearance and the thing in itself, a distinction that Schopenhauer claims is equivalent to his distinction between representation and will. He then makes several of his most distinctive philosophical claims. He notes that Kant had considered the thing in itself to be absolutely unknowable:

> I say [that the thing in itself] is nothing other than that with which we are immediately acquainted and precisely intimate, that which we find in our innermost selves as *will*; that accordingly, far from being, as all previous philosophers assumed, inseparable from and even a mere result of *cognition* (which is completely secondary and of later origin), this *will* is fundamentally different from and fully independent of cognition and so can even exist and express itself apart from cognition in all of nature, from the animal on down, which really is the case; indeed, that this will, the only thing in itself, the only truly real thing, the only original and metaphysical thing in a world where everything else is only appearance, i.e., mere representation, gives to

> everything…the power by means of which it can exist and have effect. (p. 324)

Schopenhauer argues that the voluntary actions of animals, even the organic drives of living bodies, even the nature and form of their bodies, even the vegetative growth of plants, and even gravity itself – indeed every original force manifest in chemical and physical appearances – are all absolutely identical with that we find in ourselves as will. In *The World as Will and Representation* Schopenhauer had argued that will was the substratum of all natural phenomena. In his principal work, he rejects solipsism, which he calls ‘theoretical egoism’,[58] the view that one is the only real being. Then by mounting a grand cosmic analogy, he extends the concept of will to all representations other than those of our bodies. However, just as he had done in *The Two Fundamental Problems of Ethics*, in *On Will in Nature* Schopenhauer follows what he calls ‘an analytical path’, one that proceeds from facts or particulars to universal or theoretical propositions. He does so by appealing to *a posteriori* sources to show that the natural sciences confirm his metaphysics of will.[59]

Strictly speaking the first four chapters constitute the confirmation of Schopenhauer's metaphysics by the natural sciences. Schopenhauer's analysis in these chapters follows the hierarchical ontology he saw expressed in nature, a hierarchy that is based on the degree to which will is expressed or manifest in a kind of intuitive representation. He does so in this work in just the reverse order of that given in his principal work. In *The World as Will and Representation,* after mounting his cosmic analogy extending the will to all intuitive representations, Schopenhauer immediately considered the least clear and most universally expressed objectivations[60] of will (natural forces, such as gravity, fluidity, electricity, and the like) and concluded his analysis with human beings, whose behaviours most clearly and distinctly express will. In contrast, in *On Will in Nature* he begins with the most complex and sophisticated beings in this hierarchy, human beings and animals, viewing them from the interior as it were, from their physiological processes, moving then to their exterior, anatomy, then to the physiology of plants, and lastly to inorganic nature. So Schopenhauer's first four chapters move from ‘Physiology and pathology’, to ‘Comparative anatomy’, to ‘Plant physiology’, and finally to ‘Physical astronomy’. In each chapter Schopenhauer attempts to demonstrate that ‘unbiased empiricists’, unfamiliar with his philosophy, develop explanations of natural phenomena, and that these scientists’ explanations, in either a prescient manner or through direct appeal to will, develop views that receive a more fundamental and comprehensive explanation through his metaphysics.

It is in ‘Physiology and pathology’ that Schopenhauer berates Brandis for appropriating his work, but he still uses the work of Brandis, as well as that of Treviranus, Meckel, Burdach, and others, to show that will is the agent in both voluntary and involuntary bodily functions. Thereby, Schopenhauer ultimately claims that an unconscious will is the source of all vital functions. It is within this chapter that Schopenhauer highlights what he refers to as the fundamental feature of his philosophy, one that distinguishes his view from all hitherto existing philosophies, namely, the complete separation of the will from cognition. All philosophers prior to him, Schopenhauer asserts, viewed will as either conditioned by or as a function of an intellect (p. 339).

In ‘Comparative anatomy’ Schopenhauer argues that the physical structures of animals are spatial objectivations of their wills, that is, the spatio-temporal appearance of an animal's will as an organic body. As he puts it:

> I have said that just as each individual momentary act of will presents itself at once, immediately, and inevitably in the external intuition of the body as an action of it, so every animal's collective willing, the totality of all its strivings, must have its true image in the entire body itself, in the nature of its organism, and there must be the most precise agreement between the ends of its will in general and the means that its organization provides for achieving these ends. (p. 351)

In this chapter Schopenhauer praises Lamarck's claim that the body is the physical concatenation of an animal's needs and desires, an animal's will, but he rejects Lamarck's thesis that an animal's physical characteristics are formed by its adaption to its external environment. Schopenhauer argues that the development of characteristics necessary for a species’ survival could not happen through the gradual development of originally insignificant traits over generations without the species becoming extinct. He diagnoses the problem of Lamarck's view as a symptom of the backward state of philosophy in France. Lamarck could only view animal bodies as things in themselves and therefore could only conceive of the development of species in both space and time because, like other French thinkers of his time, Lamarck was influenced by Locke and Condillac's realism and he was ignorant of Kant's doctrine of the ideality of space and time. By viewing will as ‘metaphysical’, as non-spatial and non-temporal, Schopenhauer contends that we can understand that the shape and physical organization of an animal is determined by its will according to the environment in which it had to live. So Schopenhauer observes that ‘Thus young bucks, rams, and calves butt with just their bare heads before they have horns; the young boar charges, tossing its head around while it still lacks the tusks which correspond to the intended effect; in contrast, it does not use the little teeth which it already has in its mouth with which it could actually bite. Thus its way of defending itself is not directed by an existing weapon, but the opposite’ (pp. 357–8). By observing the suitability of animals to their form of life, by drawing upon teleologically suggestive features of animal life and its relationship to the environment, Schopenhauer finds a purposiveness operating in nature as will moves blindly to its own ends. This view, he argues, had led many others to falsely view nature as the work of a will guided by an intellect distinct from nature, that is, God, a view resulting in part from the discredited belief that willing was a function of the intellect.

In light of his criticisms of the philosophically backward state of the French, it is curious that in ‘Plant physiology’ to show that what lives and sprouts forth in vegetative nature is will unguided by intellect, Schopenhauer primarily draws on the work of a French botanist, Georges Cuvier. This chapter, however, also contains Schopenhauer's attempts to connect the realist–objective standpoint of natural science, which takes the world and natural beings as given, with Kant's ‘subjective’ and idealistic standpoint, which finds the world dependent on the intellect. In its argument that the intellect itself presupposes nature, since the intellect can only result as a development of nature to the level of animal life, Schopenhauer's account goes full circle. The object presupposes the subject, the subject the object. He also interprets the relation of Kant's philosophy to Locke's in a way that will later support his claim that his philosophy is a continuation of a line of thought originating in Locke and mediated by Kant.[61]

Consequently Schopenhauer contends that Locke had demonstrated that to know things in themselves through things as they appear one must remove the contributions of our sensory functions, the so-called ‘secondary qualities’, colours, odours, warmth, tastes, and sounds, and he contends that Kant had more profoundly demonstrated that one had also to remove contributions of ‘brain functions’, Locke's so-called ‘primary qualities’, solidity, extension, figure, and mobility (p. 382). Schopenhauer claims that he has completed this line of thought by showing that what remains after these ‘deductions’ is will. In this chapter Schopenhauer also claims that ‘I have shown how among living and cognizing beings the motive and the act of will, the representing and willing, split apart more and more distinctly and separate from one another the higher one ascends on the scale of being’ (p. 394).

Schopenhauer attributes great significance to the next chapter, ‘Physical astronomy’. He recommends elsewhere that anyone who wishes to investigate his philosophy thoroughly and seriously must first take this chapter into consideration, since he had shown here with greater distinctness than anywhere else in his writings the transition from appearance to the thing in itself.[62] In this chapter, by appealing to the British astronomer Sir John Herschel, who considered gravity to be the expression of a will, he attempts to demonstrate that what is active in natural forces is that which we discover in ourselves as will. Yet Schopenhauer contends that Herschel's insight was partially obscured by his failure to overcome the prevailing prejudice that will is a function of intellect. Consequently Schopenhauer argues that Herschel could not fully appreciate the implications of his own insight.[63]

To begin to motivate the transition from appearances to thing in itself, Schopenhauer begins with our knowledge of the world. He contends that our understanding of nature is clearest and most certain in the *a priori* sciences, such as arithmetic, geometry, and logic, since these sciences deal with the *a priori* forms of cognition. Yet once we attend to anything with a trace of empirical content, which increases as we move upward in the hierarchy of nature, our understanding of phenomena decreases, and our explanations are less complete, and we develop an increasing recognition of an unknown *x* in nature. So when we attend to the case of one ball striking another, we have the most adequate comprehension of a causal relationship, knowing that the struck ball receives as much motion as the striking ball loses. Still, even here, there is something mysterious in this process, namely, the possibility of transmission of motion from one ball to the other. In more complex relationships in the inorganic realm, there is a more pronounced heterogeneity between cause and effect and a greater incommensurability between them; e.g. the same increase in heat melts wax and hardens clay. Once we begin to consider living beings, plants and animals, causality appears as stimulus in the former and motive in the latter. Here the scheme of cause and effect still applies, yet there is no qualitative similarity between cause and effect and no quantitative relationship, something that becomes obvious with the behaviour of human beings who, as possessing the faculty of reason, can have abstract concepts as their motives. Throw water on a fire and the flame is extinguished; throw it on a plant, it may be stimulated to grow or to rot; throw it on a dog and it may flee or attack; throw it on a human, and who knows what will result. To Schopenhauer, in humans such a disjunction between cause and effect appears almost miraculous:

> The separation between cause and effect has become so great, and compared to cause, effect has grown so great, that to the uneducated, since absolutely no cause appears to be present, the act of will seems to depend on nothing, to be groundless, i.e., free. For this reason, if we reflectively view the movements of our body from the outside, they present themselves as something that just happens without cause, i.e., actually as a miracle. (p. 397)

Consequently it looks as if, in the highest stage of nature, in human behaviour, the intelligibility of causality has forsaken us.

As he had done in *The World as Will and Representation*, Schopenhauer appeals to the experience of our body as both representation and will as the key for understanding nature. Thus he shifts from cognition directed outwards, from the outer sense, to cognition directed inward, to the inner sense, a move in which, only in our case, the judge of nature is akin to that which is judged. Through the inner sense, introspection, we discover will as the agent expressed in the movements of our bodies, a discovery that reveals the same agent expressed in all of nature. In other words we recognize that our inner essence is that unknown *x* expressed in nature. Consequently Schopenhauer claims that to have this insight, ‘two originally different sources of our cognition, the outer and the inner, must be connected through reflection’. Only through this connection is ‘the interior of nature…disclosed to our intellect…and the secret that philosophy has so long sought is revealed’ (p. 398).[64] That is, ‘if we carry out the unification…of external and internal cognition at the point where they contact, then despite all accidental differences, we recognize two identities, one of causality with itself at all levels, and the other of what was formerly the unknown *x* (i.e., natural forces and phenomena of life) with will in us… This is (say what you will!) the foundation of true philosophy’ (pp. 398–9).

Schopenhauer argues that wherever there is causality there is will, and will never acts without causality. In claiming this, Schopenhauer does not mean that the will is the cause of events. Rather he means that the agency discovered by the inner sense is the agency viewed by the outer sense. Just as our bodies are representation viewed from one direction and will viewed from another, causality and will are two aspects of the same thing. So he views himself overturning another philosophical error, that of believing that where there is causality, there is no will, and where there is will, there is no causality. It is easy to fall into this error, he contends, since causality and will are recognized in two different ways; causality through the outer sense and will through the inner, and the clearer the one, the more obscure the other. But as Kant taught, Schopenhauer continues, causality is nothing but the *a priori* knowable form of the understanding, the essence of the world, of representation, and as he has shown, the other side of the world is will, the thing in itself.

The next three chapters of *On Will in Nature* turn to other empirical sources to confirm Schopenhauer's philosophy. In ‘Linguistics’, he notes the tendencies in various languages to attribute a will to various natural processes, viewing such tendencies as receiving a grounding explanation in his thought. The lengthiest chapter, ‘Animal magnetism and magic’, signifies Schopenhauer's edacious curiosity and his willingness to explore phenomena generally neglected by philosophers. Aspiring to produce a metaphysics that explains the totality of experience, he could not ignore animal magnetism, sympathetic cures, telekinesis, clairvoyance, and magic, phenomena with lengthy, multicultural histories. By recognizing a metaphysical *nexus* behind the physical *nexus*, Schopenhauer attempts to show how his philosophy supplies a metaphysical explanation for the superstitious explanations provided by some practitioners and theorists of such arcane arts. 'Sinology' details some of the affinities Schopenhauer sees between his philosophy and Taoism, Confucianism, Buddhism, and Hinduism, and in a lengthy footnote he mentions many of the sources that helped form his views concerning Buddhism. Schopenhauer, who delighted in mentioning earlier thinkers who anticipated his views, concludes the chapter by arguing that his fundamental idea was developed independently from the thought of the Chinese scholar Choo-foo-tze, who held that 'the mind of Heaven is deducible from what is the Will of mankind' (p. 438). It is curious to note that Schopenhauer seldom took such trouble to show that he developed his thought independently.[65]

Schopenhauer pledges in the 'Introduction' that he will only discuss his metaphysics and not other areas of his philosophy. The penultimate chapter, 'Reference to ethics', does not technically violate this pledge, since his metaphysics is an ethics in an expanded sense of the term. Indeed, he even claims a 'much greater right than Spinoza to call my metaphysics "ethics"' (p. 442). The basis of this claim lies in his subordination of the physical order of things to a moral order, something made possible by showing that the force expressed in nature, will, has aseity, and so will meets the requirements of morality – freedom and responsibility for the nature of the world.[66] He concludes this chapter by noting that the ascetic results of his ethics appear paradoxical to the 'Protestant mind', but would appear orthodox to the Eastern mind, and he pledges his fidelity to speaking the truth even if such talk does not please the world. The theme of this commitment to the truth and the lack of any such commitments by his contemporaries is the theme of his wonderfully written final chapter, 'Conclusion'.

The place of *On Will in Nature* in Schopenhauer's oeuvre

On Will in Nature is interrelated with much of Schopenhauer's other work. Schopenhauer himself recognized this interconnectedness. In chapter 18 of the second volume of *The World as Will and Representation*, where he notes the great significance for his philosophy of *On Will in Nature*, Schopenhauer calls this small book the essential supplement to the second book of his principal work.[67] Yet other connections are significant as well. For example, to fully appreciate even *On Will in Nature*, it is necessary to read both the second book of his principal work and its supplementary essays in its second volume. Then, too, chapter 6 of the second volume of *Parerga and Paralipomena*, ‘On Philosophy and the Natural Sciences’, in which Schopenhauer advances some scientific hypotheses himself, discusses some additional scientific corroborations of his philosophy, supplementing his discussions of the natural sciences.

1 *GB* 3–5, letter to Eichstädt, 22 September 1813

2 *GB* 3, letter to Friedrich Justin Bertuch, 15 September 1813

3 *On the Fourfold Root* received three reviews, one by his first professor of philosophy at Göttingen, Gottlob Ernst Schulze, in *Göttingische Gelehrte Anzeigen*, No. 70, 30 April 1814, pp. 701–3; another in the *Neue theologische Annalen*, 1814, Vol. I, Marburg and Frankfurt-am-Main, 11 June 1814, and a third by M.A. [Georg Michael Klein], *Jenaische Allgemeine Litteraturzeitung vom Jahre 1814*, Vol. 3, Nos. 123–124, July 1814, pp. 33–42, all reprinted in *Fünftes Jahrbuch der Schopenhauer-Gesellschaft*, 1916

4 Reported by Wilhelm Gwinner, *Gespräche* (Stuttgart: Frommann Verlag Günther Holzboog, 1971), p. 17

5 *HN* 5, 147 (later Schopenhauer will suggest that Schelling tried to pass off Kant's work as his own; see *FW*, 97 (Hübscher *SW* 4, 83)

6 Schopenhauer also included in this demand reading the first chapter of *On Vision and Colours*. His first demand was to read the book twice, and the third was to be thoroughly acquainted with Kant's philosophy;

Schopenhauer also mentioned that spending some time in the school of the divine Plato and familiarity with the *Upanishads*, would serve as means to make readers more receptive to his thought (due to Plato) and so that what he had to say would not sound foreign or inimical (due to the *Upanishads*), see *WWR* 1, 6–9 (Hübscher *SW* 2, viii–xiii)

7 See *WWR* 2*,* ch. 47 (Hübscher *SW* 3, 679) where he claims that *The Two Fundamental Problems of Ethics* has dealt with ‘morality in the narrower sense’ of the term

8 See ‘Collation of the two editions’, p. lxvii

9 It appears that Schopenhauer had borrowed a copy of Hegel's *Science of Logic* when he was writing his dissertation, but claimed not to have read it; see *GB* 6, letter to Carl Friedrich Frommann, 4 November 1813

10 Schopenhauer calls the thing in itself the weak point of Kant's philosophy in a early note where he also writes ‘the thing in itself – is = 0’, see *MR* 1, 290ff. (*HN* 2, 266)

11 See *WWR 1*, 444 (Hübscher *SW 2*, 494). This remark dates from the first edition

12 See *WWR* 1, 503 (Hübscher *SW* 2, 562ff.)

13 See § 22 and n. 64

14 See *WWR* 1, 127 (Hübscher *SW* 2, 122ff.)

15 Schopenhauer also observes here that Kant's concept of the intelligible character is more correctly called ‘unintelligible’, and he compliments Schelling's exposition of Kant's position

16 For Schopenhauer's discussion of the metaphorical use of the term ‘universal act of will lying outside of time’, see *GB* 237, letter to Johann August Becker, 21 September 1844

17 See p. 31

18 Originally this was § 23 in the first edition, § 20 in the second

19 Schopenhauer refers to the Achilles’ heel of Kant's philosophy in *PP* 1, § 13 (Hübscher *SW 5,* 95)

20 In the dissertation the title of § 24 was ‘Disputation of Kant's proof of this principle and assertion of a new proof with the same purport’. Schopenhauer's new proof is based on the ‘unshakeable certainty’ we attribute to the law of causality; see p. 86. In the second edition Schopenhauer claims that § 21 has provided the proof, which this unshakeable certainty merely confirms

21 See *Critique of Pure Reason*, A189/B232–A 211/B256

22 See p. 88

23 See p. 113

24 In the Preface to *The Two Fundamental Problems of Ethics*, 17 (Hübscher *SW* 4, xxff.) Schopenhauer criticized Hegel's ‘lack of understanding’ by citing an example from the *Encyclopedia of the Philosophic Sciences* that illustrated Hegel's inability to reason properly through syllogisms

25 In the dissertation, Schopenhauer argued that this insight is not gleaned via a Schellingian intellectual intuition; see this text, n. 125 and Hübscher *SW* 3, 70

26 *WWR* 1, 126 (Hübscher *SW* 2, 121). This remark dates from the first edition

27 *WWR* 1, 127 (Hübscher *SW* 2, 122)

28 *WWR* 1, 124–5 (Hübscher *SW* 2, 119)

29 See *WWR* 1, 535 (Hübscher *SW* 2, 599), where Schopenhauer says that Kant's discussion of the opposition between the intelligible and empirical characters is ‘one of the most excellent things anyone has ever said’

30 He does this in § 20 of the second edition (p. 49)

31 *FW*, 67–8 (Hübscher *SW* 4, 47)

32 In this section Schopenhauer dropped his recommendation that this treatise needed to be read twice to understand it, a remark that he had first used concerning the first edition of his principal work, see *WWR* 1, 6 (Hübscher *SW* 2, viii)

33 Schopenhauer, *GB* 191, letter to Charles Lock Eastlake (1841). Schopenhauer also tried unsuccessfully to convince Eastlake to translate *On Vision and Colours*

34 ‘Lähmung’, in *Goethes Gedichte*, Pt. 2 (Stuttgart and Tübingen, 1815), p. 199. Schopenhauer viewed these verses as venting Goethe's ill humour, which he claimed was provoked by the poet's recognition that Schopenhauer's colour theory was an advancement over his own; see *On Vision and Colours*, p. 211. Out of respect for Goethe, Schopenhauer added this remark in the second edition of *On Vision and Colours*, well after Goethe's death

35 *GB* 499, Goethe's letter to Christoph Friedrich Ludwig Schultz, 6 July 1816. Schopenhauer became aware of this remark and was surprised at

Goethe's judgement, writing that Goethe, ‘called me an opponent of his colour theory, while I, forty years ago and twenty-two years after his death, stood there completely all alone and held up high the standard of his colour theory, shouting “you ass, he is correct,”’ *GB* 330, and p. 210

36 The anonymous review appeared in the *Leipziger Litteratur-Zeitung*, 14 July 1817, pp. 1425–8. It is reprinted in the *Fünftes Jahrbuch der Schopenhauer-Gesellschaft* (1916), pp. 187–92

37 See *GB* 35, letter to Goethe, 23 June 1818

38 *GB* 20, letter to Goethe, 11 November 1815

39 The review appeared in *Blätter für litterarische Unterhaltung*, 1855, No. 37

40 Schopenhauer also mentions that in a second edition of *Parerga and Paralipomena* he would remove these passages. Schopenhauer, however, did not live long enough to publish a second edition of that work

41 Schopenhauer told Goethe that he had provided a theory to complete Goethe's set of facts in a letter; see *GB* 19, letter to Goethe, 11 November 1815. In his 1841 letter to Eastlake, Schopenhauer wrote that his theory of physiological colours ‘would be true even if Goethe was wrong: it does not depend on his position’, *ibid.*, 192

42 Schopenhauer recognizes that, as seen in a colour sphere, colours shaded imperceptibly into one another, entailing an infinite number of colours. He claims that this provides no difficulty for his theory, because the activity of the retina is likewise infinitely divisible. The six primary colours, yellow, violet, orange, blue, green, and red, take pride of place in his theory because it is ‘simply through the rational, readily comprehensible ratio, expressible in prime numbers, into which the activity of the retina divides itself that the three pairs of colours especially distinguish themselves, and for this reason these colours are always and everywhere designated by particular names, but beyond this there is no other reason, since otherwise they have no priority over the others’ (p. 266)

43 Also see *GB* 19–20, letter to Goethe, 11 November 1815. Schopenhauer would later agree with Goethe on the production of violet, and in the second edition of *On Vision and Colours*, he lists the limitations he placed on the concept of polarity and the production of white from colours as his differences from Goethe; see p. 00

44 *GB* 192, letter to Eastlake, (1841), written in English

45 Earlier, however, he also claimed that Goethe failed to understand certain phenomena discovered later in his life, because he was too old and had begun to babble, see p. 285

46 See *WWR* 1, 8 (Hübscher *SW* 2, XI)

47 At p. 212 Schopenhauer states that ‘On vision’ provides the precursor of the arguments given ‘most comprehensively, amply, and completely in the second edition of my treatise *On the Fourfold Root of the Principle of Sufficient Reason*, § 21’

48 See, for example, *WWR* 2, ch. 40 (Hübscher *SW* 3, 527) and *GB* 274, letter to Ernst Otto Lindner, 5 January 1852

49 See *GB* 274, letter to Ernst Otto Lindner, 5 January 1852

50 See *GB* 433, Letter to F. A. Brockhaus, 8 August 1858

51 *MR* 4, 392 (*HN* 4, 2, 33)

52 See, for example, *BM* 245 (Hübscher *SW* 4, 260ff.)

53 See *GB* 108, letter to F. A. Brockhaus, 24 November 1828 and *GB* 517, letter to Schopenhauer, 29 November 1828

54 See *GB* 260, letter to Johann Eduard Erdmann, 9 April 1851

55 After this remark, Schopenhauer again proceeded to criticize Anton Rosas for plagiarizing from *On Vision and Colours*

56 A comparison of this note with the original from the first edition, along with the alterations made in this chapter, contributes to the understanding of Schopenhauer's reception of Eastern thought and of the formative role it played in the development of his philosophy

57 In *Ecce Homo*, ‘Why I Write such Good Books’, Nietzsche wrote ‘My triumph is precisely the opposite of Schopenhauer's: I say “*non legor, non legar*” [I am not read and I will not be read]’

58 *WWR* 1, § 18 (Hübscher *SW* 2, 124ff.)

59 For Schopenhauer's distinction between the analytic and synthetic methods, see *The Two Fundamental Problems of Ethics*, 5 (Hübscher *SW* 4, v) and *WWR* 2, ch. 12 (Hübscher *SW* 3, 133)

60 In *WWR* 2, ch. 20 (Hübscher *SW* 3, 277) Schopenhauer defines ‘objectivation’ [*Objektivation*] as the thing in itself presenting itself in the real corporeal world, that is, an intuitive representation or an object of our consciousness of other things. If this objectivation were eliminated, Schopenhauer claims, the thing in itself would remain

61 See *PP* 1, § 12 (Hübscher *SW* 5, 87)

62 See *WWR* 2, ch. 28, ‘On the Ability to Know the Thing in Itself’ (Hübscher *SW* 3, 213). Most of Schopenhauer's commentators, however, tend not heed this advice

63 Schopenhauer chides one of Herschel's reviewers for rejecting Herschel's view, because it was clear that the astronomer was not attributing this will to God; see p. 390

64 Schopenhauer's metaphysics aims at providing the correct explanation of ‘experience as a whole’, and he claims that the source of metaphysical knowledge is both inner and outer experience. He holds that by connecting outer with inner experience correctly, through making the latter the key to the former, one obtains metaphysical knowledge; see *WWR* 2, ch. 17 (Hübscher *SW* 3, 201), where he also claims that this was done in ‘Physical astronomy’

65 Schopenhauer also argued that he developed the main tenets of his philosophy independently from Fichte, Schelling, and Buddhism

66 In *PP* 1, the Introduction to ‘Aphorisms on the Wisdom of Life’ (Hübscher *SW* 5, 333), Schopenhauer states that his philosophy culminates in a ‘metaphysical–ethical’ standpoint, and in a note from 1813, he promises to develop a philosophy that is to be a metaphysics and ethics in one, see *MR* 1, 59 (*HN* 1, 55)

67 *WWR* 2, ch. 38 (Hübscher *SW* 3, p. 213)

Notes on text and translation

German Edition

The present translations are based on the German edition of Schopenhauer's works, as edited by Arthur Hübscher, *Sämtliche Werke* (Mannheim: F. A. Brockhaus, 1988). *On the Fourfold Root* and *On Vision and Colours* are found in Vol. 1, and *On Will in Nature* in Vol. 4. Page numbers of the Hübscher edition are given in the margins of the translation. Hübscher's definitive edition follows the first complete edition compiled by Julius Frauenstädt in 1873, with revisions taking account of numerous later editorial interventions. A paperback edition of the Hübscher edition, but using Roman type and fewer editorial notes, is the so-called *Zürcher Ausgabe*, *Werke in zehn Bänden* (Zurich: Diogenes, 1977), in which *On the Fourfold Root* and *On Will in Nature* appear in Vol. 5. However, the Zürcher edition does not include *On Vision and Colours*. (Those wishing to read the German text of these works that Schopenhauer himself last issued should consult Ludger Lütkehaus (ed.), *Arthur Schopenhauers Werke in fünf Bänden. Nach den Ausgaben letzter Hand* (Zurich: Haffmans, 1988).) Arguments for using Hübscher as the basis for translation are given by Richard Aquila in his 'Introduction' to Arthur Schopenhauer, *The World as Will and Presentation*, Vol. 1 (New York: Pearson/Longman, 2008), XLI–XLII. Long recognized as the standard German source in the field, the Hübscher collected works have served Schopenhauer studies for decades. The Hübscher edition is based on the first collected works of Schopenhauer, edited by Schopenhauer's friend and literary executor, Julius Frauenstädt (1873), but the Hübscher collected works benefit from over 100 years of textual and philological criticism. Vol. 7 of the 1988 edition of the *Sämtliche Werke* completes and corrects some of Schopenhauer's citations and identifies authors and other figures now obscured by time. In preparing these translations, we consulted both Hübscher's editorial notes as well as those of Paul Deussen (ed.), *Arthur Schopenhauers sämtliche Werke* (Munich: R. Piper, 1911–42).

Vocabulary

The editorial footnotes give terms from the German when these may be helpful for understanding a particular passage. We discuss here choices of English terms for significant items in Schopenhauer's vocabulary. We translate the term *Vorstellung*, when used to indicate an object for a subject, as ‘representation’.[a] As Schopenhauer put in a letter to Frauenstädt, ‘object and representation are the same’.[b] This choice is discussed in Janaway's translation of *The Two Fundamental Problems of Ethics*, p. 41 of the first volume of the Cambridge edition to appear.

At times Schopenhauer's philosophy uses the term *Wille* in a variety of different ways – sometimes as the individual's will as expressed in his or her actions; sometimes for the non-empirical, but individual character (i.e. ‘my will’); sometimes for will as thing in itself; sometimes as the world as a whole; sometimes for what Schopenhauer calls ‘one side’ of the world, in contrast to ‘representation’. To avoid a reification, in our translation of *On Will in Nature* we most often omit the definite article before the noun ‘will’, and we especially follow this practice any time Schopenhauer is referring to will in contrast to representation. The verb *wollen* is translated as ‘to will’ (except in non-technical contexts where ‘to want’ is more appropriate) and *das Wollen* as ‘willing’. *Wünschen* is ‘to wish’ (sometimes ‘to desire’), *willkürlich* ‘voluntary’.

Although Schopenhauer is not as consistent as translators might prefer, he distinguished between *Erkenntniß* and *Wissen*, viewing the latter as a species of the former. Schopenhauer claims that *Erkenntniß* is common to human beings and other animals, but that non-human animals have only an intuitive, immediate, and non-conceptual understanding of the world. Non-human animals, Schopenhauer claims, lack the human capacity for an abstract, conceptual, and mediate kind of *Erkenntniß*, a capacity he calls *Wissen*. Therefore, in contexts in which the terms are significant to or presuppose Schopenhauer's epistemology or philosophy of mind, we translate *Erkenntniß* as ‘cognition’, but *Wissen* as ‘knowledge’. However, in contexts in which Schopenhauer uses *Erkennen* to designate the result of some rational conceptual process, we translate *Erkennen* as ‘knowledge’ or ‘knowing’. For this reason, we have translated *Satz vom zureichenden Grunde des Erkennen* as ‘principle of sufficient reason of knowing’,[c] since, in highlighting the function of reason in the cognitive processes, Schopenhauer is discussing the principle that governs the various sorts of truth relationships between judgments and their grounds. The verb *erkennen* we generally translate as 'to cognize' or 'to recognize'.[a]

Schopenhauer also claims that conceptual thought, reasoning, the type of cognition unique to humans, contains only what immediate cognition already contains, but is abstracted from the particular and rich content of immediate cognition. Schopenhauer uses the Kantian terms *Sinnlichkeit*, *Verstand*, *Vernunft,* and *Begriff* (translated here as 'sensibility', 'understanding', 'reason', and 'concept'), but he does so to present a theory of cognition markedly different from Kant's. 'Intuition' is therefore to be understood as a term of art referring to an awareness of objects in space and time through the senses; and we translate *anschaulich* as 'intuitive', *Anschauung* as 'intuition' and *anschauen* as 'to intuit'. We have reserved the term 'perception' for *Wahrnehmung*.

We translate *Grund* in the title, *Der Satz vom zureichenden Grunde* as 'principle of sufficient reason' simply because this is a more readily recognizable set phrase in English. We also translate *Grund* as 'reason' when referring to any one of the four principles of sufficient reason or to anything grounded in a proposition. When the sense of *Grund* is more broadly causal or applied to something other than logical necessity, we use *ground.*

We usually translate *Erscheinung* as 'appearance', except when Schopenhauer uses the term to indicate a non-philosophical sense, that is, when the distinction between 'appearance' and 'thing in itself' is not strictly relevant. The coinage 'urphenomenon' translates the German *urphänomen*. In both German and English, the prefix *ur-* occurs in other combinations to indicate something primordial, primitive, original – something as a source, something non-derivative. The prefix is used here to indicate more specifically a source from which related phenomena are derived, but which is itself not derivable from or explicable by other physical phenomena. The translators recognize this term as a coinage, although perhaps not without precedent.

Our work has benefited from previous English translations, in particular those of Madam Karl Hillebrand (Jessie Taylor), E. J. F. Payne, and F. C.

White. In addition, we consulted Urs App's synoptic edition of Schopenhauer's ‘Sinology’ essay. David Simmons, of the Department of Philosophy and Religious Studies, University of Wisconsin–Whitewater, has been helpful with obscure German terms and even some of Schopenhauer's coinages. Then, too, Richard Larson occasionally made useful suggestions on the translation.

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Style, syntax, and punctuation

Schopenhauer's syntax varies greatly. Schopenhauer's prose can range from a crisp statement of but five words, to lengthy and complicated structures of more than two hundred words. Because Schopenhauer himself was aware of the sometimes unorthodox nature of his writing, having claimed that this was a function of his thinking,[a] we have attempted to approximate the original, so as to allow our readers something of the experience of Schopenhauer's prose. To this end, we have retained his paragraph structure. Where practicable, we have also sought not to sacrifice literalness for readability. However, since readers of current English are generally more accustomed to syntax of more limited range than that of Schopenhauer's German, and since English is generally not inflected for gender, but relies more on syntactic order, we have often had to approximate syntax and sometimes to supply the referent noun or noun phrase where Schopenhauer used a pronoun.

Schopenhauer sometimes punctuated in ways different from present-day conventions. We have retained, for example, Schopenhauer's use of the dash

(–), most often between sentences. Schopenhauer often uses the dash between sentences, in very few instances within sentences, rarely for emphasis (the common practice today), and even to indicate omissions within quotations (a function nowadays of the ellipsis). In a few instances, for the sake of clarity, we have added dashes to offset elements of a sentence or to reflect Schopenhauer's emphasis. We have also followed Schopenhauer's use of abbreviations and in a few instances his non-standard punctuation. We also follow Schopenhauer's curious practice of sometime italicizing proper names.

Schopenhauer's use of other languages

A polyglot, Schopenhauer frequently cites authors in classical and modern languages. We translate the majority of such passages in the text, providing the original, as Schopenhauer cited it, in footnotes. In a few instances we preserve a Latin term in the text, where Schopenhauer uses it as a term of art. Whereas Schopenhauer sometimes cites Greek with diacritical marks, sometimes without, we provide diacriticals in all instances. Often when citing Greek authors, Schopenhauer provides his own Latin translation, which we give along with the Greek in the footnotes.

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[a] See, e.g., *WWR* 1, 24–7 (Hübscher *SW* 2, 5–7)

[b] *GB* 284, 12 July 1852

[c] In this rendering, we follow the translations of Payne (1974) and White (1997)

[a] See Zöller's discussion in *Prize Essay on the Freedom of the Will* (1999), XXXVIII–XXXIX

[a] See, e.g., *GB* 203, letter to F. A. Brockhaus of 7 September 1843 and *GB* 377, letter to Frauenstädt of 24 November 1855

Chronology

1788	Arthur Schopenhauer born on 22 February in the city of Danzig (now Gdansk), the son of the Hanseatic merchant Heinrich Floris Schopenhauer and Johanna Schopenhauer, née Trosiener
1793	Danzig is annexed by the Prussians. The Schopenhauer family moves to Hamburg
1797	His sister Adele is born. Schopenhauer begins a two-year stay in Le Havre with the family of one of his father's business partners
1799	Returns to Hamburg, and attends a private school for the next four years
1803–4	Agrees to enter career as a merchant and as a reward is taken by his parents on a tour of Europe (Holland, England, France, Switzerland, Austria). From June to September 1803 is a boarder in Thomas Lancaster's school in Wimbledon
1804	Is apprenticed to two Hanseatic merchants in Hamburg
1805	His father dies, probably by suicide
1806	Johanna Schopenhauer moves with Adele to Weimar, where she establishes herself as a popular novelist and literary hostess
1807	Schopenhauer abandons his commercial career for an academic one. Enters Gotha Gymnasium and then receives

	private tuition in Weimar
1809	Studies science and then philosophy (especially Plato and Kant) at the University of Göttingen
1811	Studies science and philosophy at the University of Berlin. Attends the lectures of Fichte and Schleiermacher
1813–14	Lives in Rudolstadt, writing his doctoral dissertation, *On the Fourfold Root of the Principle of Sufficient Reason*, which is accepted by the University of Jena and published in 1813. Conversations with Goethe on colour and vision
1814	Begins reading a translation of the *Upanishads*. Stays with his mother in Weimar, but breaks with her permanently after a final quarrel. Lives in Dresden until 1818
1814–18	Works on *The World as Will and Representation*
1816	Publishes *On Vision and Colours*
1818	March: completion of *The World as Will and Representation*, published by Brockhaus at the end of the year, with ‘1819’ on title page
1818–19	Travels in Italy (Florence, Rome, Naples, Venice) and returns to Dresden
1819	Is appointed as unsalaried lecturer (*Privatdozent*) at the University of Berlin
1820	Gives his only course of lectures, which is poorly attended
1822–3	Travels again to Italy (Milan, Florence, Venice). Returns from Italy to live in Munich. Is ill and depressed
1824	Lives in Bad Gastein, Mannheim, and Dresden. Proposes to

	translate Hume's works on religion into German, but does not find a publisher
1826	Returns to Berlin
1829–30	Plans to translate Kant into English, without success; publishes *Commentatio exponens Theoriam Colorum Physiologicam, eandemque primariam, Auctore Arthurio Schopenhauero*
1831	Leaves Berlin because of the cholera epidemic. Moves to Frankfurt-am-Main
1831–2	Lives temporarily in Mannheim
1833	Settles in Frankfurt, where he remains for the rest of his life
1836	Publishes *On Will in Nature*
1838	His mother dies
1839	Enters competition set by the Royal Norwegian Society of Sciences and wins prize with his essay *On the Freedom of the Will*
1840	Submits *On the Basis of Morals* in a competition set by the Royal Danish Society of Sciences, and is not awarded a prize
1841	*On the Freedom of the Will* and *On the Basis of Morals* published under the title *The Two Fundamental Problems of Ethics*
1844	Publishes second, revised edition of *The World as Will and Representation*, adding a second volume consisting of fifty essays elaborating on ideas discussed in the first volume

1847	Publishes second, revised edition of *On the Fourfold Root*
1851	Publishes *Parerga and Paralipomena* in two volumes
1853	An article on his philosophy by J. Oxenford in *Westminster and Foreign Quarterly Review* marks the beginning of his belated recognition
1854	Publishes second editions of *On Will in Nature* and *On Vision and Colours*. Julius Frauenstädt publishes *Letters on Schopenhauer's Philosophy*
1857	Schopenhauer's philosophy taught at Bonn University
1858	Declines invitation to be a member of Berlin Royal Academy
1859	Publishes third edition of *The World as Will and Representation*
1860	Publishes second edition of *The Two Fundamental Problems of Ethics*. Dies on 21 September in Frankfurt-am-Main

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Collation of the Two Editions of On the Fourfold Root

ON THE FOURFOLD ROOT OF THE PRINCIPLE OF SUFFICIENT REASON – 1813	ON THE FOURFOLD ROOT OF THE PRINCIPLE OF SUFFICIENT REASON – 1847
	Preface
First Chapter: Introduction	First Chapter: Introduction
§ 1 *The method*	§ 1 *The method*
§ 2 *Its application in the present case*	§ 2 *Its application in the present case*
§ 3 *An advantage that this inquiry could have*	§ 3 *Advantage of this inquiry*
§ 4 *Importance of the principle of sufficient reason*	§ 4 *Importance of the principle of sufficient reason*
§ 5 *The principle itself*	§ 5 *The principle itself*
Second Chapter: Survey of what is most important in previous teachings about the principle of sufficient reason	Second Chapter: Survey of what is most important in previous teachings about the principle of sufficient reason
§ 6 *First statement of the principle and distinction between two meanings of the same*	§ 6 *First statement of the principle and distinction between two meanings of the same*
§ 7 *Descartes*	§ 7 *Descartes*
§ 8 *Spinoza*	§ 8 *Spinoza*
§ 9 *Leibniz*	§ 9 *Leibniz*
§ 10 *Wolff*	§ 10 *Wolff*
§ 11 *Philosophers between Wolff and Kant*	§ 11 *Philosophers between Wolff and Kant*
§ 12 *Kant and his school*	§ 12 *Hume*
§ 13 *On the proof of the principle*	§ 13 *Kant and his school*
	§ 14 *On the proof of the principle*
Third Chapter: Inadequacy of previous accounts and sketch of a new one	Third Chapter: Inadequacy of previous accounts and sketch of a new one
§ 14 *Cases that are not included among the previously established meanings of the principle*	§ 15 *Cases that are not included among the previously established meanings of the principle*
§ 15 *All applications of the principle must be divided into definite species*	§ 16 *The root of the principle of sufficient reason*
§ 16 *The root of the principle of sufficient reason*	
§ 17 *Its fourfold nature*	
Fourth Chapter: On the first class of objects for the subject and the form of the principle of sufficient reason governing in it	Fourth Chapter: On the first class of objects for the subject and the form of the principle of sufficient reason governing in it
§ 18 *General explanation of this class of objects*	§ 17 *General explanation of this class of objects*
§ 19 *Outline of an analysis of experience. The understanding*	§ 18 *Outline of a transcendental analysis of empirical reality*
§ 20 *Immediate presence of representations*	§ 19 *Immediate presence of representations*
§ 21 *On the immediate object*	§ 20 *Principle of sufficient reason of becoming*
§ 22 *Mental images and dreams. Fantasy*	§ 21 *Apriority of the concept of causality – Intellectual basis of empirical intuition – The understanding*
§ 23 *Principle of sufficient reason of becoming*	§ 22 *On the immediate object*
§ 24 *Disputation of Kant's proof of this principle and assertion of a new proof composed with the same purport*	§ 23 *Disputation of the proof of the apriority of the concept of causality advanced by Kant*
§ 25 *On the misapplication of the law of causality*	§ 24 *On the misapplication of the law of causality*
§ 26 *The time of an alteration*	§ 25 *The time of an alteration*

Fifth Chapter: On the second class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 27 *Explanation of this class of objects. Reason*
§ 28 *Uses of concepts*
§ 29 *Representatives of concepts*
§ 30 *Truth*
§ 31 *Principle of sufficient reason of knowing*
§ 32 *Logical truth*
§ 33 *Empirical truth*
§ 34 *Metaphysical truth*
§ 35 *Metalogical truth*

Sixth Chapter: On the third class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 36 *Explanation of this class of objects*
§ 37 *Principle of the reason of being*
§ 38 *Ground of being in space*
§ 39 *Ground of being in time. Arithmetic*
§ 40 *Geometry*

Seventh Chapter: On the fourth class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 41 *General explanation*
§ 42 *Subject of cognition and object*
§ 43 *Subject of willing*
§ 44 *Willing*
§ 45 *Law of motivation*
§ 46 *Motive, decision, empirical and intelligible character*
§ 47 *Causality of will on cognition*
§ 48 *Memory*
§ 49 *Feelings, etc.*

Eighth Chapter: General remarks and results

§ 50 *Transition*
§ 51 *Other principles of the division of the four types of grounds*
§ 52 *The systematic order*
§ 53 *Temporal relation between ground and consequent*
§ 54 *Reciprocity of grounds*
§ 55 *Series of grounds and consequents*
§ 56 *Confirmation from languages*
§ 57 *Every science has as its guiding thread one form of the principle of reason in preference to the others*
§ 58 *Apology concerning imagination and reason*
§ 59 *Two principal results*

Fifth Chapter: On the second class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 26 *Explanation of this class of objects*
§ 27 *Uses of concepts*
§ 28 *Representatives of concepts. The power of judgement*
§ 29 *Principle of sufficient reason of knowing*
§ 30 *Logical truth*
§ 31 *Empirical truth*
§ 32 *Transcendental truth*
§ 33 *Metalogical truth*
§ 34 *Reason*

Sixth Chapter: On the third class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 35 *Explanation of this class of objects*
§ 36 *Principle of the reason of being*
§ 37 *Ground of being in space*
§ 38 *Ground of being in time. Arithmetic*
§ 39 *Geometry*

Seventh Chapter: On the fourth class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 40 *General explanation*
§ 41 *Subject of cognition and object*
§ 42 *Subject of willing*
§ 43 *Willing. Law of motivation*
§ 44 *Influence of will on cognition*
§ 45 *Memory*

Eighth Chapter: General remarks and results

§ 46 *The systematic order*
§ 47 *Temporal relation between ground and consequent*
§ 48 *Reciprocity of grounds*
§ 49 *Necessity*
§ 50 *Series of grounds and consequents*
§ 51 *Every science has as its guiding thread one form of the principle of reason in preference to the others*
§ 52 *Two principal results*

I
On the Fourfold Root of the Principle of Sufficient Reason

A Philosophical Treatise

by

Arthur Schopenhauer

Second, Quite Improved and Considerably Enlarged Edition[1]

Ναὶ μὰ τὸν ἁμετέρᾳ ψυχᾷ παραδόντα τετρακτύν,
Παγὰν ἀενάου φύσεως, ῥίζωμά τ᾽ ἔχουσαν.

[‘By the one who bestows on our mind the number four, fount and root of ever-flowing creation.’: Pythagorean oath]

[V] Preface

This treatise in elementary philosophy, which first appeared in the year 1813, when I had gained my doctorate with it, has since become the underpinnings of my whole system. For this reason it cannot be allowed to remain out of print, as has been the case for four years, without my knowing it.

However, to send such a youthful work into the world again now with all its flaws and faults seems to me to be irresponsible. For I am aware that the time in which I will no longer be able to emend it cannot be very far distant, but with time the period of my real effectiveness will first appear, and that it will be a long period I am consoled by a firm trust in Seneca's promise: ‘although envy imposed silence on everyone living with you, they will come who will judge without offence and without partiality’[a] (*Letters* 79). I have, therefore, as far as it is possible, helped the present youthful work and given the brevity and uncertainty of life, I must even regard it as a special good fortune that it has been granted me in my sixtieth year still to correct that which I had written in my twenty-sixth.

But [VI] now, in doing so, it has been my plan to deal with my youthful self indulgently, and as far as it is ever possible, to let him have his say and to speak freely. But where he advanced something incorrect or superfluous, or even omitted the best part, I have had to cut him off, and this has often enough been the case, so that perhaps many will get the same impression as when an old man reads a young man's book aloud, but often puts it down in order to indulge his own digressions on the theme.

It is easy to foresee that a composition of this sort, improved after so long a time, could never again achieve the unity and finish that belongs to one that is a harmonious whole. Even in style and execution, such an unmistakable difference will make itself palpable that the sensitive reader will certainly never be in doubt whether he hears the cadence of the old or the young man. For certainly there is a distant interval between the mild, unassuming tone of the young man, who advances his subject confidently because he is still naïve enough to believe quite seriously that all those who occupy themselves with philosophy could have nothing to do with anything else but the truth, and that, as a result, they would welcome anyone who furthers this – and the firm, but at times somewhat acerbic voice of the old man who finally had to discover what a noble society of tradespeople and submissive sycophants he has fallen among and what they aimed at. Indeed, if at times indignation now gushes from all his pores, then the reasonable reader would not blame him; for has the result not already taught the reader what happens when there is always talk of striving for truth, but eyes are always fixed on the intentions of supreme authorities, and when, [VII] conversely, 'a god can be made of anything'[a] has also been extended to great philosophers and, thus, a clumsy charlatan like Hegel is confidently branded as such? German philosophy is precisely so, laden with contempt, mocked abroad, rejected by honest sciences – like a strumpet who, for filthy lucre, yesterday gave herself up to one, today to another; and the minds of the contemporary generation of scholars are jumbled by Hegelian nonsense: incapable of thought, coarse and stupefied, they become the prey of the vulgar materialism that has crept out of the Basilisk's egg. Good luck! I return to my subject.

One will thus have to be content with the disparity of the tone since here I could not append the later additions separately as I have done with my principal work; so it does not matter what I had written in my twenty-sixth year and what in my sixtieth; rather, it only matters that one wants to get one's bearings, to gain a firm footing and become clear about the fundamental concepts of all philosophizing and to receive in these few sheets a small book through which one is able to learn something sound, solid, and true; and this, I hope, will be the case. With the expansion that many parts have now received, a compendious theory of the entire cognitive faculty has even come about, in that the theory always proceeds only from the principle of reason,[b] advances the subject from a new and peculiar direction, but then, is enlarged by the first book of the *World as Will and Representation*, along with the relevant chapters of the second volume, and by my 'Critique of the Kantian Philosophy'.

Frankfurt-am-Main in September 1847.

a *etiamsi omnibus tecum viventibus silentium livor indixerit; venient qui sine offensa, sine gratia judicent* (*Ep*[*istles*] 79[, 17])

a *e quovis ligno fit Mercurius* [lit.: ‘a Mercury can be made of whatever wood’]

b *Satz vom Grunde* [i.e. principle of sufficient reason]

[IX] Contents

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[1] First Chapter Introduction

§ 1 The method

Plato, the divine, and the amazing Kant unify their impressive voices in the recommendation of a rule for the method of all philosophizing, and indeed of all knowledge in general.[*],[2] They say that one should comply with two laws equally, that of *homogeneity* and that of *specification*, but not the one to the detriment of the other. The law of *homogeneity* enjoins us through attention to the similarities and correspondences among things, to comprehend species, and to unify these into genera, and these into families until we at last arrive at the supreme, all-encompassing concept.[3] Since this law is a transcendental one, essential to our reason, it presupposes that nature is in agreement with it, which presupposition is expressed in the old rule: 'entities are not to be multiplied without necessity'.[a] – In contrast, Kant expresses the law of *specification* as: 'the varieties of entities are not to be diminished rashly.'[b] It demands that we clearly distinguish among genera unified under an all-encompassing concept of a family and again among [2] the higher and lower species comprehended under these genera, guarding against making any kind of leap by directly subsuming the lower species, or even the completely individual, under the concept of a family, while any concept of a family is still capable of a classification into sub-classes and yet none reaches down to mere intuition.[c] Kant teaches that both laws are transcendental *a priori* principles of reason[a] postulating correspondence between things and the laws themselves, and Plato seems to express the same in his own way, as he says these rules, to which all sciences are indebted for their origin, were tossed down to us from the seat of the gods along with the fire of Prometheus.

§ 2 Its application in the present case

I find the latter of these laws, such a powerful recommendation notwithstanding, applied too seldom to a fundamental principle[b] of all cognition,[c] *the principle of sufficient reason*. For although it has for a long time been frequently put in a general form, nonetheless, no one has distinguished among its highly differing applications, in each of which it acquires another meaning, and which, therefore, reveal its origin from differing cognitive powers.[4] However, applying the principle of homogeneity, while neglecting its opposite, has bred many persistent errors, particularly in the observation of our powers of mind; whereas, applying the law of specification has brought about the greatest and most important advances – a comparison of Kantian philosophy with all earlier philosophy teaches this. I may be permitted to quote a passage in which Kant recommends the application of the law of specification to the sources of our cognition, since it justifies my present effort. 'It is of the utmost importance to isolate cognitions that differ from one another in their species and origin, and carefully to avoid mixing them up together with others with which they are usually connected in their use. What chemists do in analysing [3] matter, what mathematicians do in their pure theory of magnitude, the philosopher is even more obliged to do, so that he can securely determine the proper value and influence of the advantage that a special kind of cognition has over the aimless use of the understanding.' (*Critique of Pure Reason*, the Doctrine of Method, 3rd Section.)[d]

§ 3 Advantage of this inquiry[5]

Should I succeed in showing that the principle that constitutes the subject of this inquiry derives not immediately from *one*, but above all from *differing* basic cognitions of our mind, then it will follow that the necessity that it entails as a firmly-established *a priori* principle likewise is not *one* and everywhere *the same*, but just as various as the sources of the principle itself. Then, however, anyone who grounds[a] a conclusion on the principle has the obligation to determine precisely which of the different necessities that lie at the basis of the principle supported his conclusion, and he should indicate as much with a specific name (which I will propose). I hope that thereby something will be gained for clarity and precision in philosophizing, and I consider it an unavoidably necessary prerequisite for philosophy to attain the greatest possible intelligibility, through precise determination of the meaning of any expression, so as to protect us from error and intentional deception and make any knowledge gained in the domain of philosophy a secure possession rather than one that can be torn away from us by a misunderstanding or ambiguity discovered later.[6] Above all the genuine philosopher will generally seek lucidity and clarity and will always strive not to be like a turbid, raging, rain-swollen stream, but much more like a Swiss lake, which, in its peacefulness, combines great depth with a great clarity that just reveals its great depth.[7] Clarity is the good faith of philosophers,[b] Vauvenargues has said. Conversely the fraudulent philosopher will certainly not seek to conceal his thoughts through words, according to Talleyrand's maxim,[c] but will seek to conceal his deficiency of thought and to shift onto the reader's conscience the [4] unintelligibility of his philosopheme, which grows out of the obscurity of his own thought. This explains why, in some writings, e.g. those of Schelling,[8] the didactic tone so frequently turns into the reproachful; indeed, the readers are often reproached in advance, in anticipation of their incompetence.

§ 4 Importance of the principle of sufficient reason

It is extremely great, so it may be called the basis of all science.[9] *Science* specifically means a *system* of findings,[d] i.e., a unity of connected findings in opposition to a mere aggregate of the same.[10] But what else than the principle of sufficient reason connects members of a system? The very thing that distinguishes any science from a mere aggregate is that each of a science's findings follows from another as its ground. Therefore, Plato already says, ‘For true opinions are not worth much until someone binds them through reasoning’.[a] *Meno* p. 385 Bip.[11] – Moreover almost all sciences contain[12] knowledge[b] of causes from which effects can be determined and likewise other findings of the necessities of the consequent[c] from grounds, as they will be presented in our later observation; which Aristotle already expressed in the words ‘all knowledge which is rational or somewhat partakes of the rational concerns causes and principles.’[d] *Metaphysics* v, 1.[13] – Since it is now the presupposition that we always make *a priori*[14] that everything has a reason[e] which justifies our everywhere asking why, so this ‘why’ may be called the mother of all sciences.

§ 5 The principle itself

Later it will be shown that the principle of sufficient reason is a common expression of many findings given [5] *a priori*. Provisionally, it must meanwhile be put forth in some kind of formula. I choose the Wolffian as the most general: *Nihil est sine ratione cur potius sit quam non sit*.[f] Nothing is without a reason why it is.

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[*] Plato, *Philebus*, pp. 219–223 [16c–18d]. *Politicus* [*Statesman*] 62–63. *Phaedrus* 361–363, edn [published at] Bipontium [1781–7]. Kant, *Critique of Pure Reason*, Appendix to the Transcendental Dialectic

[a] *entia praeter necessitatem non esse multiplicanda* [*Critique of Pure Reason* A652/B680. For a discussion of the origin of this rule, see Guyer and Wood, p. 749, n. 116]

[b] *entium varietates non temere esse minuendas* [*Critique of Pure Reason* A656/B684]

[c] *Anschauung*

[a] *Grundsätze der Vernunft*

[b] *einen Hauptgrundsatz*

[c] *Erkenntniß*

[d] [A842/B870]

a *gründet*

b *La clarté est la bonne foi des philosophes* [*Réflexions et Maximes,* 729]

c [The maxim is *l'homme a reçu la parole pour pouvoir cacher sa pensée*: ‘Humans have received speech in order to conceal their thoughts.’ *Mémoires*, Paris, 1842, 4. 447; letter of Talleyrand to the Spanish diplomat Izquierdo]

d *Erkenntnissen*

a καὶ γὰρ αἱ δόξαι αἱ ἀληθεῖς οὐ πολλοῦ ἄξιαι εἰσιν, ἕως ἄν τίς αὐτὰς δήσῃ αἰτίας λογισμῷ·(*etiam opiniones verae non multi pretii sunt, donec quis illas ratiocinatione a causis ducta liget*). [Schopenhauer cites the Bipontium edn, summarizing here Socrates’ remarks at 97e–98a]

b *Kenntnisse*

c *Folgen*

d πᾶσα ἐπιστήμη διανοητική, ἤ καὶ μετέχουσά τι διανοίας, περὶ αἰτίας καὶ ἀρχάς ἐστι (*omnis intellectualis scientia, sive aliquo modo intellectu participans, circa causas et principia est*) [1025b6]

e *Grund*

f [‘Nothing is without a reason why it is rather than is not.’ Wolff, *Philosophia prima*, *sive Ontologia*, rev. edn, Frankfurt, 1736, section 70, p. 47]

[6] Second Chapter Survey of what is most important in previous teachings about the principle of sufficient reason

§ 6 First statement of the principle and distinction between two meanings of the same

A more or less exactly determined abstract expression for such a fundamental principle[a] of all cognition[b] must also have been found very early; thus, it would be difficult and, moreover, not of great interest, to demonstrate where such a one first occurs.[15] Plato and Aristotle still do not formally advance it as a fundamental principle;[c] however, they more frequently express it as a self-evident truth. So *Plato* says, with a naïveté that seems to contrast with the critical investigation of modern times as the state of innocence contrasts with knowledge of good and evil: ‘it is necessary that all which occurs, occurs with a cause, for how could it occur without a cause?’ *Philebus* p. 240 Bip.[d] and again in the *Timaeus* (p. 302) ‘everything that occurs must necessarily occur through some cause, since it is impossible for something to occur without a cause’.[e] – *Plutarch*, at the close of his book, *On Fate*,[f] cites among the fundamental principles of the Stoics: ‘the most important and first appears to be that nothing occurs [7] without a cause, but everything according to preceding causes.’[g,16]

In the *Posterior Analytics* I, 2, *Aristotle* to some extent states the principle of reason in the words: ‘we think we understand a thing perfectly whenever we think we know the cause by which the thing is, that it is really the cause of that thing, and that the thing cannot possibly be otherwise.’[a] In his *Metaphysics* Book IV, ch. 1, he already give a classification of the different forms of grounds,[b] or rather the principles, αρχαί, of which he accepts eight forms, though the classification is neither thorough nor precise enough. However, he says here perfectly correctly: ‘now it is common to all principles that they are the first thing through which anything is, or occurs, or is known.'[c] In the following chapter he distinguishes sundry forms of causes, although along with some superficiality and confusion.[17] However, better than there, he states four types of causes[d] in the *Posterior Analytics* II, 11: 'there are four causes: the first is that which is the essence of a thing; the second is that by which it must necessarily be; the third is that which first puts it in motion; the fourth is its purpose.'[e] Now this is the origin of the classification of the causes[f] generally accepted by the Scholastics into material, formal, efficient and final causes;[g] as these, then, are to be seen in Suárez's *Metaphysical Disputations*,[h] this true compendium of Scholasticism, disp. 12, sect. 2 and 3. But even *Hobbes* (*On the Body*,[i] p. II, ch. 10, § 7) still cites it and explains it. – This classification is again to be found in Aristotle and even somewhat more detailed and clear: namely *Metaphysics* I, 3. And in the book *On Sleep and Sleeplessness*,[j] ch. 2, it is briefly cited. – However, concerning the highly important distinction between the cognitive ground[k] and cause, even Aristotle reveals an idea[l] of the subject [8] to a certain degree insofar as in the *Posterior Analytics* I, 13, he expressly proves that knowing and demonstrating *that* something is, is very different from knowing and demonstrating *why* it is: what he presents as the latter is knowledge of the cause,[a] as the former, the cognitive ground. But he does not attain a completely clear consciousness of the distinction; otherwise, he would have adhered to and observed it in the remainder of his writings. This, however, is certainly not the case, for even as in the passages alluded to above, where he aims to distinguish the various forms of grounds, the most essential distinction that is being considered in this chapter never again occurs to him, and concerning this, he generally uses the word *cause*[b] for any ground, of whatever type it be, but indeed he even quite frequently calls the cognitive ground, the premises of a conclusion, a cause,[c] so, e.g., *Metaphysics* IV, 18; *Rhetoric* II, 21; *On Plants* I, p. 816,[d] and especially *Posterior Analytics* I, 2, where precisely the premises of a conclusion are called causes of the conclusion.[e] But if one refers to two related concepts by the same word, then this is a sign that one does not know their distinction or adhere to it, since accidental homonymy of widely differing things is something else entirely. At its most striking, this error comes to light in his description of the sophism of treating what is not a cause as a cause[f] in the book *On Sophistical Refutations*, ch. 5. By αἴτιον here he always understands only the ground of proof,[g] the premises, in other words a cognitive ground. The sophism consists in one's quite correctly proving something to be impossible; however, the sophism certainly does not have any bearing on the proposition[h] disputed by it, which one nevertheless alleges to have demolished. Thus it is not at all a question of physical causes. Except the use of the word αἴτιον has carried so much weight among logicians of modern times that they simply maintain it in their presentations of *fallaciarum extra dictionem*[i] always explaining the *fallacia non causae ut causa*[j] as a specification[k] of a physical cause, which it is not: so, e.g., Reimarus, G.E. Schulze, Fries and all whom I have come across: I found this sophism first correctly presented in Twesten's *Logic*.[l] Also, as a rule, in other scientific works and [9] dissertations, the interpolation of a false cause is designated through the charge *fallacia non causae ut causa*.

Of these, among the ancients *Sextus Empiricus* affords us a striking example of the mingling and confusion of the logical law of the cognitive ground with the transcendental natural law of cause and effect. Specifically in the 9th book *Against the Mathematicians*;[a] thus in the book *Against Physics*[b] § 204, he attempts to prove the law of causality and says: One who asserts that there is no cause (αἴτια) has either no cause (αἴτια) to assert this or he has one. In the first case his assertion is no truer than its opposite: in the second, precisely by his assertion he establishes that there are causes.

Hence we see that the ancients still did not attain a clear distinction between the requirement for a cognitive ground for establishing a judgement and that of a cause for the occurrence of a real event. – As for the Scholastics later, the law of causality was for them just an axiom, which was exalted beyond all investigation: ‘we do not inquire if there is a cause, since nothing is more certain in and of itself’[c] says Suárez, disp. 12, sect. 1. In doing so they held fast to the Aristotelian classification of causes; in contrast, as far as I know, they also did not attain consciousness of the necessary distinction in question here.[18]

§ 7 Descartes

For[d] in this regard we even find our excellent Descartes, the instigator of subjective investigation and in this the father of modern philosophy, still gripped by confusions which can scarcely be explained, and we will soon see to what serious and deplorable results this has led metaphysics.[19] In *Meditations on First Philosophy*, Axiom I of the 'Reply to the Second Objection', he says, 'nothing exists of which it could not be asked from which cause it exists. This can even be asked concerning God, not as if he requires [10] some sort of cause in order to exist, but because the immensity of his nature is *the cause or the reason* because of which he requires no cause in order to exist'.[e] He should have said, the immensity of God is a cognitive ground from which it follows that God requires no cause. However, he mingles the two, and one sees that he is not clearly aware of the great distinction between cause and cognitive ground.[20] But actually it is intent that falsifies insight[f] for him. For here, where the causal law[g] requires a *cause*, instead of this he inserts a *cognitive ground* because such a ground, in turn, leads to nothing further than a ground, and through this axiom he paves the way to the *ontological proof* for the existence of God, the proof he discovered after *Anselm* had only provided an introduction to it in a general way. For immediately after the axioms, of which that cited was the first, this ontological proof is now put forth formally and quite seriously; indeed, this proof is actually already expressed in this axiom, at least as implicit in it as is the chick in an egg long brooded. Thus, while all other things require a cause for their existence, for the God who is placed on the ladder of the cosmological proof the immensity[a] implicit in his own concept is sufficient; or, as the proof itself expresses it: 'in the concept of the supremely perfect being his existence is necessarily contained.'[b] Thus this is the conjurer's trick,[c] for the sake of which the *confusion of the two foremost meanings of the principle of reason*, with which Aristotle was already familiar, is at once used 'to the greater glory of God.'[d]

Considered in the light of day and impartially, this famous ontological proof is now actually a most beloved piece of nonsense. That is, at any opportunity, someone contrives a concept assembled out of all sorts of predicates, taking care, however, that among these, either plainly and nakedly, or, as is more decorous, wrapped up in another predicate, e.g., 'perfection', 'immensity',[e] or something of the sort, there is also a predicate of reality or of existence. As is well known, from a given concept one can extract all of its essential predicates, i.e., those implicit in it, and just so one can also extract the essential predicates of these predicates by means of pure analytical judgement. [11] These predicates, as a result, have *logical* truth, i.e., have their cognitive ground in the given concept. Now accordingly, anyone can also fetch the predicate of reality or existence from his arbitrarily contrived concept, and therefore there is now supposed to be an object corresponding to the concept, independent of it, existing in actuality![f]

> If the thought were not so confounded acute
> One might be tempted to call it extraordinarily stupid.[g]

Moreover, the simple answer to such an ontological demonstration is: 'it all depends on where you have gotten your concept: if it is drawn from experience, fine,[a] since its object exists and requires no further proof; in contrast, if it is hatched from your own half-brain,[b] then all its predicates will not help it: it is just a figment of your imagination,'[c] Except that theology, in order to gain a foothold in the quite foreign area of philosophy, where it would like to be, had to resort to proofs of this sort, provoking a very unfavourable prejudice against its pretensions. – But oh! for the prophetic wisdom of Aristotle! He had never heard anything of the ontological proof, but as if he saw into the night of the coming dark ages, caught sight of that scholastic trickery and wanted to block its path, he carefully demonstrates, in the 7th chapter of the 2nd book of the *Posterior Analytics*, that the definition of a thing and the proof of its existence are two different and eternally separated things, since through the one we experience *what* is meant, but through the other that such a thing exists: and like an oracle of the future, he pronounces the sentence: 'since being is not a genus, it is not the essence of anything.'[d] That means, 'existence[e] can never belong to essence; being[f] can never belong to the essence of a thing'. – How much to the contrary Mr *von Schelling* venerates the ontological proof is to be seen from his long note, p. 132 of the first volume of his *Philosophical Writings*[g] of 1809. But we can see something even more instructive in this: specifically how an impudent, cocky gasbag[h] is sufficient to blow sand in Germans' eyes. But that even such a thoroughly contemptible fellow as *Hegel*, whose whole philosophastry[i] was a [12] monstrous amplification of the ontological proof, wanted to defend this against Kant's critique, is an alliance of which the ontological proof itself would be ashamed, regardless of how shame is otherwise of little concern to it. – It is just not to be expected that I would speak with respect of people who have brought philosophy into disdain.

§ 8 Spinoza

Although Spinoza's philosophy consists mainly in the negation of the two-fold dualism advanced by his teacher, Descartes, namely, between God and world and between soul and body, he remains completely true to him in the above-mentioned confusion and mixture of the relationship between the cognitive ground and consequent with that between cause and effect; indeed, wherever possible, he sought from the same confusion and mixture to draw for his metaphysics an even greater advantage than his teacher had drawn for his own, since the indicated confusion became the basis of his whole pantheism.

For all his essential predicates are contained implicitly[a] in one concept; therefore, they can be developed explicitly[b] through mere analytic judgements: the sum of this is his definition. This definition is, therefore, different from the concept itself not in content, but only in form, since the definition consists of judgements, all of which are thought along with[c] the concept and, therefore, have their cognitive ground in the concept insofar as they state its essence. Accordingly, these judgements can be seen as the consequents of that concept, as it is their ground. This relation of a concept to the judgements that are grounded in it, and that can be developed analytically from it, is now exactly the relation that Spinoza's so-called God has to the world, or, more correctly, that the one and only substance has to its numberless accidents. (‘God, or the substance consisting of infinite attributes.’ *Ethics* I, prop. 11. – ‘God or all the attributes of God.’[d]) It is thus the relation of the *cognitive ground* to its consequent; whereas, *actual* theism (that of Spinoza is merely nominal) accepts the relation of the *cause* to the effect in which the [13] ground remains different and separate from the consequent, not, as in this case, according to the mere method of consideration,[e] but essentially and actually, thus, in itself and always. For it is such a cause of the world, with the addition of personality, that the word God, used in all honesty, indicates. In contrast, a God without personality is a contradiction in terms.[f] However, since Spinoza now also wanted to retain the word God for substance in the relations he put forth, and since he even expressly called this substance the *cause* of the world, he could only bring this about by completely mixing up these two relations, and as a result also the principle of the cognitive ground with that of causality. To give evidence of this, I call attention to the following passage among countless others. 'It is to be noted that for everything that exists a definite *cause* necessarily exists by which the thing exists. And it is to be noted that this cause, because that thing exists, must either be comprehended in the existing thing's own nature and *definition* (since it specifically belongs to the nature itself of the thing to exist), or that it must be given as something *outside* of itself.'[a] (*Ethics* I, prop. 8, n. 2.) In the latter case, he means an efficient cause as is shown from what follows; whereas, in the former he means a mere cognitive ground; however, he identifies both and thereby prepares the way for his intent to identify God with the world: everywhere his trick is to confuse a cognitive ground lying within a given concept with a cause operating[b] externally, and to conflate these, and he learned it from Descartes. As evidence of this confusion, I quote the following passages. 'From the necessity of the divine nature, everything that can fall under infinite intellect must follow.' (*Ethics* I, prop. 16.)[c] At the same time, however, everywhere he calls God the cause of the world. 'Everything that exists, expresses the power of God who is the *cause* of all things',[d] *ibid*. prop. 36, proof. – 'God is the immanent *cause* of all things, but not the transient',[e] *ibid*. prop. 18. – 'God is the *efficient cause* not only of things existing, but also of the essence of things',[f] *ibid*. prop. 25. – [21] It says in *Ethics* III, prop. 1, proof, 'From any given *idea* some *effect* must necessarily follow'.[g] And *ibid*. prop. 4, 'Nothing can be destroyed, unless it be from an external cause. – Proof: The *definition* of anything affirms its essence (essence, [14] nature as distinct from "*existentia*", existence[h]) and does not negate it; in other words, it maintains the essence of the thing and does not deny it. If, therefore, we attend to the thing itself and not to external causes, we can see nothing in it that would be able to destroy it.'[i] This means: because a concept can contain nothing that contradicts its definition, i.e., the sum of its predicates, it also cannot contain anything which could become the cause of its destruction. However, this view will lead at its height to the somewhat lengthy 2nd demonstration of the 11th proposition, in which the cause, which could destroy or annihilate,[a] is mixed up with a contradiction which its definition would contain and which for that reason would annihilate it. The need to confound cause and cognitive ground becomes so urgent here that Spinoza never allows himself to say only 'cause'[b] or even 'reason'[c] but each time is compelled to put 'reason or cause',[d] which therefore occurs eight times on a single page in order to cover the fraud. Descartes had done the same in the axiom cited above.

So, then, Spinoza's pantheism is actually only the *realization* of Descartes's ontological proof. First he adopts Descartes's onto-theological[e] principle, cited above: 'the immensity of God's nature is the *cause or the reason* because of which he requires no cause in order to exist';[f] instead, in place of 'God',[g] he always says (in the beginning) 'substance',[h] and now he concludes: 'the essence of substance necessarily involves existence, or existence belongs to its nature; therefore, substance must be the *cause of itself*.'[i] (*Ethics* I, prop. 7.) Thus, by the same argument with which Descartes had proved the existence of God, he proves the absolutely necessary existence of the world – which, thus, requires no God. He does this still more clearly in the 2nd note to the 8th proposition: 'Since existence appertains to the nature of substance, its definition must necessarily involve existence, and, consequently, from its definition alone existence must be inferred.'[j] This substance, however, as is well known, is the world. – In the same sense the demonstration for prop. 24 says: 'For that which of its nature, considered in itself alone (i.e. the definition), involves existence, is the *causa sui*.'

That which Descartes had asserted only *ideally*, only *subjectively*, i.e. only for us, only for the benefit of *knowledge*,[k] namely for the [15] proof of the existence of God, Spinoza took as *real* and *objective*, as the actual relation of God to the world. For Descartes, existence[l] lies in the *concept* of God, and thus becomes an argument for his actual being;[a] for Spinoza, God himself is put in the world. Consequently, what for Descartes was merely a cognitive ground, Spinoza makes into a ground of reality: Descartes had taught in his ontological proof that God's existence[b] follows from his essence,[c] so Spinoza makes of it the *causa sui* and brashly opens his *Ethics* with: 'by that which is *causa sui*, I mean that of which the essence (concept) involves existence'[d] – deaf to Aristotle's shouting to him: 'existence does not belong to the essence of anything!'[e] Well, here we have the most obvious confusion of cognitive ground with cause. And if the Neo-Spinozists (Schellingites, Hegelians, etc.), as it is their custom to take words for thoughts, often indulge in pretentious, devout admiration of this *causa sui*, for my part I see in *causa sui* only a contradiction in terms,[f] a before that is an after, an audacious decree, to cut off the endless causal chain, indeed, an analogy to that Austrian who, unable to reach high enough to fasten the clasp on his tightly-strapped Shako, stood on a chair. The true emblem of *causa sui* is Baron Münchhausen, who, clamping his legs around his horse as it sinks in the water, pulls his pigtail up over his head and raises himself and the horse into the heights; under this emblem, put: *causa sui*.

In conclusion, cast a glance at proposition 16 of the first book of the *Ethics*, where from the ground that 'from the given definition of anything the intellect concludes further properties which in fact necessarily follow from this definition'[g] is inferred: 'from the necessity of the divine nature (i.e. taken to be real) infinite things must follow in infinite ways';[h] thus indisputably this God bears a relation to the world as that of a concept to its definition. Nevertheless the corollary is directly connected: 'God is the *efficient cause* of all things.'[i] The confusion of the cognitive ground with cause cannot be taken farther, and it could not have more significant results than here. But this indicates the importance of the theme of the present essay.

To [16] these errors from two great minds of the past, stemming from a lack of clarity of thought, in our day Mr von Schelling has added a little epilogue, taking the trouble to provide the third step for the existing climax. Where Descartes had met this demand for the inexorable causal law that had driven his God into a corner by substituting a cognitive ground for the required cause, in order to settle the matter; and where Spinoza had made of this an actual cause, and thus, *causa sui*, whereby for him God became the world; so Mr von Schelling (in his essay on human freedom[a]) separated the ground from the consequent in God himself; thus, he consolidated the matter all the better by raising it to a real and incarnate hypostasis of the ground and its consequent, and acquainted us with something 'that is in God not he himself, but his ground, as a primordial ground,[b] or rather, *abyss*'.[c] This is truly precious.[d] – Moreover it is well enough known today that he took the whole fable from Jakob Böhme's *A Fundamental Statement Concerning the Earthly and Heavenly Mystery*;[e] but it appears not to be known where Jakob Böhme himself took the matter from, and thus where the abyss has its origin; therefore, I take the liberty to mention it. It is the βυθός, i.e., *abyssus*, *vorago*, the bottomless depth, abyss, of the Valentinians (a heretical sect of the second century), which abyss impregnated its consubstantial silence that then bore understanding and the world, as Irenaeus reported in *Against Heresies* Book I, ch. 1 in the following words: ‘For they say that in those unseen heights which have no name, there is a pre-existing, perfect Aeon; this they also call fore-rule, forefather, and the *abyss*…they say that being incomprehensible and invisible, eternal and unborn, he has existed during endless aeons in the deepest calmness and tranquillity, and that coexisting with him was Understanding, which they also called Grace and Silence. This *abyss* thought to put forth from himself the beginning of all things and to lay that offshoot (which he had resolved to put forth) like a seed into the coexisting Silence, as it were into a womb. Now this Silence, being thus impregnated, and having conceived, gave birth to Understanding, [17] a being which was like and equal to its creator and alone able to comprehend the greatness of its father. This understanding they also called the only-begotten and beginning of everything.’[f] Jakob Böhme must somehow have become aware of this from the history of heresies, and from his hands Mr von Schelling has accepted it credulously.[22]

§ 9 Leibniz

Leibniz[a] first put forth the principle of reason formally as a fundamental principle[b] of all cognition and science. He proclaimed it very pompously in many passages in his works, thereby even putting on airs about it, and portraying himself as if he were the first one to discover it; however, he knew nothing further to say about it, except that anything and everything must always have a sufficient reason why it is so and not otherwise, which must have been quite well known to the world before him. In doing so, he occasionally indicated the distinction between the two fundamental meanings[c] of the principle, but did not expressly emphasize it, nor even clearly discuss it elsewhere. The main passage is in his *Principles of Philosophy*[d] § 32, and a bit better in the French edition under the title *Monadology*: [18] ‘by virtue of the principle of sufficient reason we accept that no fact can be true or actual, no judgement correct, without having sufficient reason why it is so and not otherwise'[e] – to which is to be compared the *Theodicy*, § 44 and the 5th letter to Clarke, § 125.[23]

§ 10 Wolff[a]

Wolff is thus the first who expressly separated the two main meanings of our fundamental principle and discussed their distinction.[24] Nevertheless, he still does not advance the principle of sufficient reason in logic, as is now done, but in his *Ontology*.[b] In fact, in § 71 he insists that one not confuse the principle of sufficient reason of cognition with that of cause and effect, but here he still does not clearly define the distinction and causes confusion himself, for even here in the chapter 'On sufficient reason,'[c] §§ 70, 74, 75, 77, as evidence for the 'principle of sufficient reason'[d] he cites examples of cause and effect and motive and action, which, if he wanted to make this distinction, should have been cited in the chapter 'On Causes'[e] of the same work. Now in this chapter he again cites quite similar examples and again advances here the 'principle of cognition'[f] (§ 876), which, as has already been dealt with above, certainly does not belong here; however, it serves to point to the precise and clear distinction of the principle of cognition from the law of causality which then follows §§ 881–884.[25] 'That is called a principle', he further says here, 'which contains in itself the reason for something else', and he distinguishes three forms of the same, namely: 1) *principle of becoming* (cause), which he defines as '*the reason for the actuality of another*; e.g. if a stone becomes warm, then fire or the sun's rays are the reason for the warmth in the stone.'[g] – 2) '*principle of being*', which he defines: 'the reason for the possibility of something else: in the same example, the reason for the possibility that the stone can accept warmth is in the essence or mode of composition of the stone'.[h] This latter seems to me to be an inadmissible idea.[i,26] As Kant has shown sufficiently, possibility in general[27] [19] is correspondence with the conditions of all experience known to us *a priori*.[j] From this we know, with reference to Wolff's example of the stone, that alterations as effects of causes are possible, i.e., that one state can follow from another if the former state contains the conditions for the latter. We find here as an effect the state of the stone's being warm, and as cause the preceding state of the stone's finite[a] capacity for heat and its contact with free heat. Now that Wolff wants to call the first-mentioned property[b] of this state ‘principle of being’ and the second ‘principle of becoming’[c] is due to a mistake, originating in the fact that for the stone's part, the conditions are more enduring and thus can wait longer for the others.[28] That the stone is such as it is, is of such chemical property as to bring with it a given amount of specific heat, that is, a capacity for heat that stands in inverse relation to its specific heat, is, just as much as its coming into contact with free heat, a result of a chain of previous causes, all of them ‘principles of becoming;’ however, the coincidence of both circumstances constitutes first of all the state, which, as cause, occasions[d] the warming, as effect. Hence, there is no room for Wolff's ‘principle of being’ which I thus do not acknowledge, and about which I have been somewhat detailed here partly because I will use the term with a completely different meaning below, and partly because the discussion requires that one make the true sense of the causal law comprehensible.[29] 3) Wolff then distinguishes *principle of cognition*,[e] as we have said, and under ‘cause’[f] he further cites ‘impulsive cause, or reason determining will’.[g]

§ 11 Philosophers between Wolff and Kant

In his *Metaphysics,*[h] §§ 20–24 and §§ 306–313, *Baumgarten* repeats the Wolffian distinctions.

In his *Theory of Reason*[i] § 81, *Reimarus* distinguishes between 1) *inner ground*, his explanation of which agrees with Wolff's ‘ground of being’,[j] though it would hold of the ‘cognitive ground’[k] [20] if he did not transfer to things what only applies to concepts; and 2) *external ground*, i.e., ‘cause’.[l] – In § 120ff. he correctly defines ‘cognitive ground’ as a condition of evidence:[a] but in § 125, in an example, he still confuses it with cause.[30]

In the *New Organon*,[b] *Lambert* no longer mentions the Woffian distinctions, but shows in an example that he distinguishes between cognitive ground and cause, specifically in Vol. I, § 572, where he says that

God is the ‘principle of being’[c] of truths, and truths are ‘principles of cognition’ of God.[d]

In *Aphorisms*[e] § 868, *Platner* says, ‘What within the representation[f] is called the ground and consequent (*principium cognoscendi, ratio – rationatum*) is in reality cause and effect (*causa efficiens – effectus*). Any cause is the cognitive ground; any effect, the cognitive consequent.’[g] Thus he supposes[h] that cause and effect are that which in reality correspond to the concepts of ground and consequent in thinking, that the former are related to the latter somewhat as substance and accident are to subject and predicate or as the quality of an object is related to our sensation[i] of it, etc. I consider it to be superfluous to refute this opinion, since anyone can easily see that the relation of ground and consequent is something completely different from a cognition of effect and cause in judgements, although in some cases cognition of a cause can, as such, also be the ground of a judgement that states the effect.

§ 12 Hume[31]

Until this serious thinker, no one had doubted the following. First, and before all things in heaven and on earth, is the principle of sufficient reason, specifically as the law of causality. For it is an eternal truth;[j] i.e., it is in and for itself,[k] superior to gods and fate; in contrast, everything else (e.g. the mind[l] that thinks the principle of reason, no less than the whole world and even whatever may be the cause of this world, such as atoms, [21] motion, a creator, etc.) exists only in accordance with and by means of this principle. *Hume* was the first to whom it occurred to ask from whence this law of causality has its authority and to demand its credentials. His result is well known: that causality is nothing more than an empirically perceived *temporal sequence* of things and states to which we have become accustomed. Anyone immediately perceives the falsity of this, and it is also not difficult to refute. But the merit lay in the question itself: the question became the impetus and the starting point for *Kant's* profound investigations leading to transcendental idealism, from which proceeds the conviction that the world, as a whole, is as dependent upon us as we are, individually, on it – an incomparably more profoundly conceived and well-founded idealism than that which had existed earlier, which was principally Berkeley's. For since Kant demonstrated the transcendental principles as such, by means of which we can determine something about objects and their possibility *a priori*, i.e. *prior* to all experience, he proved that these things cannot exist independent of our cognition, just as they present themselves to us. The resemblance of such a world with that of a dream is apparent.

§ 13 Kant and his school

The main passage in *Kant* on the principle of sufficient reason is in the minor work ‘On a discovery according to which any new critique of pure reason has been made superfluous’,[a] and especially in the first section of this work, under A. In this work, Kant insists on the distinction between the logical (formal) principle of cognition, ‘every proposition must have its ground’, and the transcendental (material) principle, ‘everything must have its ground’, as he polemicizes against *Eberhard*, who wanted to make the two identical. – After I produce the only correct proof, in a separate section,[b] I will later criticize his proof of the *a priority* and thus the transcendentality of the causal law.

Following [22] these [22] precedents, the distinction between cognitive ground and cause is determined rather precisely in many textbooks on logic that the Kantian school has produced, e.g., the ones[32] by Hoffbauer, Maaß, Jakob, Kiesewetter, and others. Kiesewetter in particular quite sufficiently provides the distinction in his *Logic* (Vol. 1, p. 16) in this way: ‘A logical ground (cognitive ground) is not to be confused with the real ground (cause). The principle of sufficient reason belongs to logic; the principle of causality to metaphysics.’ P. 60: ‘The former is the principle of thinking; the latter of experience. Cause concerns actual things; logical ground, only representations.’

Kant's opponents insist all the more on this distinction. In his *Logic*, § 19, remark 1, and § 63, *G. E. Schulze* complains about the confusion of the principle of sufficient reason with that of causality. In his *Logic*, pp. 20–1, *Salomon Maimon* complains that much has been said of sufficient reason without explaining what is understood by it, and in the Preface, p. XXIV, he reproaches Kant for deriving the principle of causality from the logical form of the hypothetical judgement.

In his ‘Letters on Spinoza's Doctrine’[a] *F. H. Jacobi* says that from the confounding of the concept of ground with that of cause arose a delusion that has become the source of various false speculations, and in his own way he indicates the distinction between the two. However, as is usual with him, one finds here more smug semantic trickery[b] than serious philosophizing.

Finally from ‘Aphorisms towards the Introduction to the Philosophy of Nature’,[c] § 184, which opens the first issue of the first volume of Marcus and Schelling's *Yearbooks of Medicine*,[d] one can see how Mr *von Schelling* distinguishes ground from cause. From this same source one can also learn that gravity is the *ground* and light the *cause* of things – which I merely cite as a curiosity since, besides, such frivolous day-to-day chatter[e] deserves no place among the beliefs of serious and honest researchers.[33]

§ 14 [23] On the proof of the principle

We should also note that it has often been attempted in vain to prove the principle of sufficient reason in general, mostly without precisely determining what meaning it is taken to have. E.g. Wolff, in *Ontology* § 70, a proof which Baumgarten repeats in his *Metaphysics* § 20. It would also be superfluous to repeat it and to refute it here, since it is obvious that it rests on word-play. Platner in *Aphorisms* § 828, Jakob in his *Logic and Metaphysics* (p. 38, 1794)[a] have attempted other proofs in which it is very easy to recognize their circularity.[b] Kant's proof, as has already been said, will be discussed later. Since through this treatise I hope to point out the different laws of our cognitive faculty, the common expression of which is the principle of sufficient reason, it will follow as a matter of course that the general principle is not to be proved; rather, what Aristotle said applies to all of these proofs (with the exception of the Kantian, as one which is directed not to its validity, but rather to the *a priority* of the law of causality[34]): ‘they seek a reason for that which has no reason; for the starting point of demonstration is not a demonstration’, *Metaphysics* III, 6[c] – compare *Posterior Analytics* I, 3.[d,35] For every proof is a reduction of the doubtful to that which is acknowledged, and if we also always require a proof of the latter, whatever it be, then we will ultimately arrive at propositions that are certain,[e] that express forms and laws, and so, the conditions of all thinking and knowing. Hence all thinking and knowing consist in the application of these propositions, so that certainty is nothing more than an agreement with them, and, consequently, their own certainty cannot be ascertained in turn from other propositions. In the 5th chapter we will discuss the nature[f] of the truth of such propositions.

Besides, to seek a proof for the principle of reason in particular is a special kind of wrongheadedness which indicates a lack of soundness.[g] For every proof is a demonstration of the ground for an expressed judgement, which in [24] exactly this way obtains the predicate *true*. The principle of reason expresses exactly this requirement for a ground for any judgement. Now whoever requires a proof, i.e., the demonstration of a ground for it, in doing so presupposes it as already true, indeed, supports his requirement on exactly this presupposition. Thus he falls into this circle: he requires a proof for the right to require a proof.[36]

a *Ur-Grundsatz*

b *Erkenntniß*

c *Hauptgrundsatz*

d Ἀναγκαῖον πάντα τὰ γιγνόμενα διά τινα αἰτίαν γίγνεσθαι· πῶς γὰρ ἄν χωρὶς τούτων γίγνοιτο; (*necesse est, quaecunque fiunt, per aliquam causam fieri: quomodo enim absque ea fierent?*) [26e]

e πᾶν δὲ τὸ γιγνόμενον ὑπ’ αἰτίου τινὸς ἐξ ἀνάγκης γίγνεσθαι· παντὶ γὰρ ἀδύνατον χωρὶς αἰτίου γένεσιν σχεῖν. (*quidquid gignitur, ex aliqua causa necessario gignitur: sine causa enim oriri quidquam, impossibile est.*) [28a]

f *de fato*

g μάλιστα μὲν καὶ πρῶτον εἶναι δόξειε, τὸ μηδὲν ἀναιτίως γίγνεσθαι, ἀλλὰ κατὰ προηγουμένας αἰτίας. (*maxime id primum esse videbitur, nihil fieri sine causa, sed omnia causis antegressis.*) [ch. 11, p. 574E]

a ἐπίστασθαι δὲ οἰόμεθα ἕκαστον ἁπλῶς, ὅταν τήν τ' αἰτίαν οἰόμεθα γινώσκειν δι' ἥν τὸ πρᾶγμα ἐστιν, ὅτι ἐκείνου αἰτία ἐστί, καὶ μὴ ἐνδέχεσθαι τοῦτο ἄλλως εἶναι. (*Scire autem putamus unamquamque rem simpliciter, quum putamus causam cognoscere, propter quam res est, ejusque rei causam esse, nec posse eam aliter se habere.*) [*Posterior Analytics* 71b9 abbreviated]

b *Gründe*

c πασῶν μὲν οὖν κοινὸν τῶν ἀρχῶν, τὸ πρῶτον εἶναι, ὅθεν ἢ ἔστιν, ἢ γίγνεται, ἢ γιγνώσκεται (*omnibus igitur principiis commune est, esse primum, unde aut est, aut fit, aut cognoscitur*) [*Metaphysics* 1013a17]

d *Gründe*

e αἰτίαι δὲ τέσσαρες· μία μὲν τὸ τί ἦν εἶναι· μία δὲ τό τινων ὄντων, ἀνάγκη τοῦτο εἶναι· ἑτέρα δὲ, ἥ τι πρῶτον ἐκίνησε· τετάρτη δὲ, τὸ τίνος ἕνεκα (*causae autem quatuor sunt: una quae explicat quid res sit; altera, quam, si quaedam sint, necesse est esse; tertia, quae quid primum movit; quarta id, cujus gratia*) [*Posterior Analytics* 94a21]

f *causarum*

g *causas materiales, formales, efficientes et finales*

h *Suarii disputationibus metaphysicis*

i *de corpore*

j *de somno et vigilia*

k *Erkenntnißgrund*

l *Begriff*

a *Erkenntniß der Ursache*

b αἴτιον

c αἴτιας

d *de plantis* I p. 816 (ed. Berol)

e αἰτίαι τοῦ συμπεράσματος

f *non causae ut causa*, παρὰ τὸ μὴ αἴτιον ὡς αἴτιον,…*de sophisticis elenchis* ch. 5 [167b21]

g *Beweisgrund*

h *Satz*

i [fallacies that do not depend on words]

j [fallacy of treating what is not cause as a cause]

k *Angabe*

l [*Grundriß der analytischen Logik; für seine Vorlesungen entworfen*. Kiel: Schwers Witwe, 1834]

a *adversus Mathematicos*

b *ad. physicos*

c *non inquirimus an causa sit, quia nihil est per se notius*

d *Cartesius*

e *responsio ad secundas objectiones in meditationes de prima philosophia, axioma* I: *Nulla res existit, de qua non possit quaeri, quaenam sit causa, cur existat. Hoc enim de ipso Deo quaeri potest, non quod indigeat ulla causa ut existat, sed quia ipsa ejus naturae immensitas est* causa sive ratio, *propter quam nulla causa indiget ad existendum*. [emphasis is Schopenhauer's]

f *die Absicht, welche…die Einsicht verfälscht*

g *Kausalitätsgesetz*

a *immensitas*

b *In conceptu entis summe perfecti existentia necessaria continetur* [paraphrasing *Meditations on First Philosophy*, Axiom X of the 'Reply to the Second Objection']

c *tour de passe-passe*

d *ad majorem Dei gloriam*

e *perfectio*, *immensitas*

f *Wirklichkeit*

g [Friedrich Schiller, *Wallenstein*, ‘The Piccolomini’, II, 7]

a *à la bonne heure*

b *sinciput*

c *Hirngespinst*

d τὸ δ᾽ εἶναι οὐκ οὐσία οὐδενί· οὐ γὰρ γένος τὸ ὄν (*esse autem nullius rei essentia est, quandoquidem ens non est genus*) [92b13]

e *Existenz*

f *Daseyn*

g *philosophischen Schriften* [Landschut: Philip Krüll]

h *dreistes, vornehmthuendes Schwadroniren*

i *Philosophasterei*

a *implicite*

b *explicite*

c *mitgedacht*

d *Deus, sive substantia constans infinitis attributis. Eth*[*ica*] I. pr[oposition] 11. – *Deus, sive omnia Dei attributa* [*Ethica* I. proposition 19]

e *Betrachtungsart*

f [*contradictio in adjecto*, a term of art for Schopenhauer, is an attribution of a quality to a noun such that the attributed quality contradicts the meaning of the noun. Rhetorically, this is usually an oxymoron or paradox, such as the ever-tasty ‘jumbo shrimp’]

a *Notandum, dari necessario uniuscujusque rei existentis certam aliquam* causam*, propter quam existit. Et* [*Denique*] *notandum, hanc causam, propter quam aliqua res existit, vel debere contineri in ipsa natura et* definitione *rei existentis (nimirum quod ad ipsius naturam pertinet existere), vel debere* extra *ipsam dari* [emphasis is Schopenhauer's]

b *wirkenden*

c *Ex necessitate divinae naturae omnia, quae sub intellectum infinitum cadere possunt, sequi debent* [abbreviated]

d *Quidquid existit Dei potentiam, quae omnium rerum* causa *est, exprimit* [emphasis is Schopenhauer's in this and the following three quotations]

e *Deus est omnium rerum* causa *immanens, non vero transiens*

f *Deus non tantum est* causa efficiens *rerum existentiae, sed etiam essentiae*

g *ex data quacunque* idea *aliquis* effectus *necessario sequi debet*

h (*Wesen, Beschaffenheit zum Unterschied von* existentia*, Daseyn*) [parenthesis is Schopenhauer's]

i *Nulla res nisi a causa externa potest destrui. – Demonstr.*: Definitio *cuiuscunque rei ipsius essentiam…affirmat, sed non negat; sive rei essentiam ponit, sed non tollit. Dum itaque ad rem ipsam tantum, non autem ad causas externas attendimus, nihil in eadem poterimus invenire, quod ipsam possit destruere* [emphasis is Schopenhauer's]

a *aufheben*

b *causa*

c *ratio*

d *ratio seu causa*

e *ontotheologischen*

f *ipsa naturae Dei immensitas est* causa sive ratio*, propter quam nulla causa indiget ad existendum* [emphasis is Schopenhauer's]

g *Deus*

h *substantia*

i *substantiae essentia necessario involvit existentiam: ergo erit substantia* causa sui. (*Eth*[*ica*], p[art] I, prop[osition] 7 [paraphrased]) [Hereafter we follow Schopenhauer in using the Latin, *causa sui*]

j *Quoniam ad naturam substantiae pertinet existere, debet eius definitio necessariam existentiam involvere et consequenter ex sola eius definitione debet ipsius existentia concludi*

k *Erkenntniß*

l *Existenz*

a *Daseyn*

b *existentia*

c *essentia*

d *per causam sui intelligo id, cujus essentia* (Begriff) *involvit existentiam* [part I, definition I]

e τὸ δ᾽ εἶναι οὐκ οὐσία οὐδενί

f *contradictio in adjecto*

g *ex data cuiuscunque rei definitione plures proprietates intellectus concludit, quae revera ex eadem necessario sequuntur*

h *ex necessitate divinae naturae* (*d.h. real genommen*) *infinita infinitis modis sequi debent.* [parenthesis is Schopenhauer's]

i *Deum omnium rerum esse* causam efficientem

a *Abhandlung von der menschlichen Freiheit* [*Philosophische Untersuchungen über das Wesen der menschlichen Freiheit und die damit zusammenhängenden Gegenstände* (1809)]

b *Urgrund*

c *Ungrund*

d *Hoc quidem vere palmarium est*

e [*Mysterium Pansophicum oder*] *Gründlichem Bericht vom irdischen und himmlischen Mysterio* [1620]

f Λέγουσι γάρ τινα εἶναι ἐν ἀοράτοις καὶ ἀκατονομάστοις ὑψώμασι τέλειον Αἰῶνα προόντα· τοῦτον δὲ καὶ προαρχήν, καὶ προπάτορα, καὶ βυθὸν καλοῦσιν…ἀπάρχοντα δὲ αὐτὸν ἀχώρητον καὶ ἀόρατον, ἀΐδιόν τε

καὶ ἀγέννητον, ἐν ἡσυχίᾳ καὶ ἠρεμίᾳ πολλῇ γεγονέναι ἐν ἀπείροις αἰῶσι χρόνων. Συνυπάρχειν δὲ αὐτῷ καὶ ννοιαν, ἣν δὲ καὶ Χάριν, καὶ Σιγὴν ὀνομάζουσι· καὶ ἐννοηθῆναί ποτε ἀφ᾽ ἑαυτοῦ προβαλέσθαι τὸν βυλὸν τοῦτον ἀρχὴν τῶν πάντων, καὶ καθάπερ σπέρμα τὴν προβολὴν ταύτην (ἥν προβαλέσθαι ἐνενοήθη) καθέσθαι, ὡς ἐν μήτρᾳ τῇ συνυπαρχούσῃ ἑαυτῷ Σιγῇ. Ταύτην δὲ, ὑποδεξαμένην τὸ σπέρμα τοῦτο καὶ ἐγκύμονα γενομένην, ἀποκυῆσαι Νοῦν, ὅμοιόν τε καὶ ἴσον τῷ προβαλόντι, καὶ μόνον χωροῦντα τὸ μέγεθος τοῦ Πατρός. Τὸν δὲ νοῦν τοῦτον καὶ μονογενῆ καλοῦσι, καὶ ἀρχὴν τῶν πάντων. (*Dicunt enim esse quendam in sublimitatibus illis, quae nec oculis cerni, nec nominari possunt, perfectum Aeonem praeexistentem, quem et proarchen, et propatorem, et Bythum vocant. Eum autem, quum incomprehensibilis et invisibilis, sempiternus idem et ingenitus esset, infinitis temporum seculis in summa quiete ac tranquillitate fuisse. Unâ etiam cum eo Cogitationem exstitisse, quam et Gratiam et Silentium (Sigen) nuncupant. Hunc porro Bythum in animum aliquando induxisse, rerum omnium initium proferre, atque hanc, quam in animum induxerat, productionem, in Sigen (silentium) quae unâ cum eo erat, non secus atque in vulvam demisisse. Hanc vero, suscepto hoc semine, praegnantem effectam peperisse Intellectum, parenti suo parem et aequalem, atque ita comparatum, ut solus paternae magnitudinis capax esset. Atque hunc Intellectum et Monogenem et Patrem et principium omnium rerum appellant*)

a [Schopenhauer's spelling: ‘Leibnitz’]

b *einen Hauptgrundsatz*

c *Hauptbedeutungen*

d *principiis philosophiae*

e *en vertu du principe de la raison suffisante nous considérons qu'aucun fait ne sauroit se trouver vrai ou existant, aucune énonciation véritable, sans qu'il y ait une raison suffisante, pourquoi il en soit ainsi et non pas autrement*

a [Schopenhauer's spelling: ‘*Wolf*’]

b *Ontologie* [*Philosophia prima, sive Ontologia*, rev. edn, Frankfurt, 1736]

c *de ratione sufficiente*

d *principium rationis sufficientis*

e *de causis*

f *principium cognoscendi*

g principium fiendi (*causa*) *...ratio actualitatis alterius; e.gr. si lapis calescit, ignis aut radii solares sunt rationes, cur calor lapidi insit*

h principium essendi*...ratio possibilitatis alterius: in eodem exemplo, ratio possibilitatis, cur lapis calorem recipere possit, est in essentia seu modo compositionis lapidis*

i *Begriff*

j *uns a priori bewußten Bedingung aller Erfahrung*

a *endlich*

b *Beschaffenheit*

c *principium essendi…principium fiendi*

d *bedingt*

e *principium cognoscendi*

f *causa*

g *causa impulsiva, sive ratio voluntatem determinans* [*Ontologia*, section 940]

h *Metaphysica* [Halae Magdeburgicae: Carol. Herman. Hemmerde, 1757]

i *Vernunftlehre* [*Die Vernunftlehre als eine Anweisung zum richtingen Gebrauch der Venunft in der Erkenntniß der Wahrheit, aus zwoen ganz natürlichen Regeln der Einstimmung und des Widerspruchs hergeleitet*. 5 edn, Hamburg: Bohn, 1790]

j *ratio essendi*

k *ratio cognoscendi*

l *causa*

a *Bedingung der Aussage*

b *Neues Organon,* [*oder Gedanken über die Forschung und Bezeichung des Wahren und dessen Unterscheidung vom Irrthum und Schein*, 2 vols. Leipzig: J. Wendler, 1764]

c *principium essendi*

d *principia cognoscendi*

e [*Philosophische*] *Aphorismen,* [*nebst einigen Anleitungen zur philosophischen Geschichte*], Pts. I & II, Leipzig: Schwickert, (I) 1776; (II) 1782]

f *Vorstellung*

g *Erkenntnißfolge*

h *meint*

i *Empfindung*

j *veritas aeterna*

k *er selbst ist an und für sich*

l *Verstand*

a *Über eine Entdeckung, nach der alle Kritik der reinen Vernunft* [*durch eine ältere*] *entbehrlich gemacht werden soll* [Königsberg: Friedrich Nicolovius, 1790]

b *Paragraphen*

a *Briefen über die Lehre des Spinoza* [*Über die Lehre des Spinoza in Briefen an den Herrn Moses Mendelssohn.* (1785, 1789)]

b *Spiel mit Phrasen*

c *Aphorismen zur Einleitung in die Naturphilosophie*

d *Jahrbücher der Medicin* [*als Wissenschaft*] [Tübigen: J.G. Cotta, 1806]

e *leichtfertiges In-den-Tag-hinein-Schwätzen*

a [Ernst Platner *Philosophische Aphorismen* (*Philosophical Aphorisms*), 1776–82; Ludwig Heinrich von Jakob, perhaps *Grundriß der allgemeinen Logik* (*Outline of General Logic*), 1788, as Hübscher indicates in *HN* 5, 76, entry 276]

b *Cirkel*

c λόγον ζητοῦσι ὧν οὐκ ἔστι λόγος· ἀποδείξεως γὰρ ἀρχὴ οὐκ ἀπόδειξίς ἐστι (*rationem eorum quaerunt, quorum non est ratio: demonstrationis enim principium non est demonstratio*) [*Metaphysics* 1011a12]

d [72b 20]

e *gewisse Sätze*

f *Art*

g *Besonnenheit*

[25] Third Chapter Inadequacy of previous accounts[a] and sketch of a new one

§ 15 Cases that are not included among the previously established meanings of the principle

From[a] the summary given in the previous chapter, it follows as a general result that two applications of the principle of sufficient reason have been distinguished, although at first gradually and surprisingly late, and not without frequent encounters anew with confusions and mistakes. The one application is to judgements that, in order to be true, always must have a reason,[b] and the other is to alterations of real objects that always must have a cause.[c] We see that in both cases the principle of sufficient reason justifies the question *why*, and this property is essential to it. But are all cases in which we are justified in asking why included under these two relations? Suppose I ask, why are the three sides of this triangle equal? Then the answer is: because the angles are equal. Now is the equality of the angles the cause of the equality of the sides? No, since here the question is not of alteration and, thus, not of an effect that must have a cause. – Is it mere cognitive ground? No, since the equality of the angles is not mere proof of the equality of the sides, not mere ground of a judgement; indeed, from mere concepts it is never to be understood that because the [26] angles are equal, the sides too must be equal, since the concept of the equality of the angles does not contain that of the equality of the sides. Thus here there is no connection between concepts or judgements, but between sides and angles. The equality of the angles is not *immediately* the ground for the *cognition* of the equality of the sides, but only *mediately*, that it is the ground of something's *being so*[d] – here of the sides' being equal; thus, the angles being equal, the sides must be equal. Here there is a necessary connection between the angles and the sides, not immediately a necessary connection of two judgements. – Or again, when I ask why, indeed, 'that which is not done, can be done', but 'that which is done' never 'can be undone'[a] (hence, why actually the past is absolutely irrevocable, the future inexorable), so this too cannot be demonstrated purely logically by means of mere concepts. And it is not just a matter of causality, since this governs only *events* in time, never time itself. It is not through causality, but rather immediately, as through its mere existence, that the present hour, commencing inexorably, has tossed the passing hour into the bottomless abyss of the past and made it eternally nothing. This cannot be understood through mere concepts, nor clarified through them; rather, we recognize it quite immediately and intuitively,[b] just as we recognize the distinction between right and left and all that depends on this, e.g., that the left glove does not fit the right hand.[37]

Thus, since not all cases in which the principle of sufficient reason finds application can be reduced to logical ground and consequent and to cause and effect, so in this classification the law of specification must not have been satisfied. However, the law of homogeneity requires us to assume that those cases cannot differ infinitely, but must be reducible to certain species. Now before I attempt this classification, it is necessary to determine what in all cases is specific to the principle of sufficient reason as its special character, because the concept of the genus must be determined before the concept of the species.[38]

[27] § 16 The root of the principle of sufficient reason[39]

Our cognizing consciousness, appearing as outer and inner sensibility[c] *(receptivity), as understanding*[d] *and reason,*[e] *divides into subject and object and comprises nothing else. To be object for the subject and to be our representation are the same. All of our representations are objects for the subject, and all objects for the subject are our representations. Now, however, it occurs that all of our representations stand to one another in a connection that is governed by laws*[f] *and of a form determinable a* priori, *by means of which connection nothing existing of itself and independently, likewise nothing existing in isolation and apart, can be an object for us.* It is this connection that the principle of sufficient reason expresses in its generality.[a] Now although (as we can already infer from the previous discussion) this connection assumes different forms according to the different kinds of objects, and the principle of reason in turn modifies its expression to indicate these forms, yet the connection always retains something common to all the forms, which our principle, conceived generally and abstractly, expresses. Therefore, it is these relations that lie at the basis of the principle (and which are to be more closely demonstrated in what follows) that I have called the root of the principle of sufficient reason. Now upon closer observation we see that in accordance with the laws of homogeneity and specification, these relations separate into definite species, quite different from one another, whose number can be reduced to *four* since the number agrees with the *four classes* into which everything is divided that can become an object for us, thus all of our representations. These classes will be advanced and discussed in the next four chapters.

In each of them we will see the principle of sufficient reason appear in a different form, yet we will see it everywhere show itself, by its admitting the expression given above, to be the same principle and as having sprung from the root presented here.[40]

a *Darstellung*

b *Grund*

c *Ursache*

d *So-seyns*

a *infecta facta…facta infecta fieri possunt* [Plautus *Aulularia* IV, 10, 15]

b *intuitiv*

c *Sinnlichkeit*

d *Verstand*

e *Vernunft*

f *gesetzmäßigen*

a *Allgemeinheit*

[28] Fourth Chapter On the first class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 17 General explanation of this class of objects

The first class of possible objects of our faculty of representation is that of *intuitive*, *complete*, *empirical* representations. They are *intuitive* in contrast to those which are merely thought, that is, to abstract concepts; *complete* insofar as, following Kant's distinction, they contain not merely what is formal, but also what is material in appearances; *empirical*, partly insofar as they proceed not merely from connection of thought, but have their origin in an excitation[a] of sensation[b] in our sensitive[c] body to which they constantly refer as evidence of their reality, partly because in accordance with the laws of space, time, and causality in union, they are connected in that complex, without beginning or end, that constitutes our *empirical reality*. However, since, according to the result of the Kantian teaching, this empirical reality does not annul[d] its *transcendental ideality*, they are considered merely as representations here where the concern is the formal elements of cognition.[41]

[29] § 18 Outline of a transcendental analysis of empirical reality[42]

The forms of these representations are those of the inner and outer senses, *time* and *space*. But only as *filled* are they *perceivable*.[e] Their *perceptibility* is *matter*, to which I will return later, in § 21.[43]

If time were the only form of these representations, then there would be no *simultaneity*[f] and therefore nothing *persistent*[g] and no *duration*.[h] For *time* is perceived[44] only insofar as it is filled, and its course is perceived only through the *change*[a] in that which fills it. Therefore the *persistence* of an object is recognized only through contrast with the *change* of other objects that are *simultaneous*. But the representation of *simultaneity* is not possible in mere time; rather, it depends for its other half on the representation of *space* because in mere time everything is *one after another*,[b] but in space, *side by side*:[c] thus this representation of simultaneity first arises through the unity of time and space.[45]

If, in contrast, space were the only form of representation of this class, then there would be no *change*,[46] since change or alteration is *succession*[d] of states, and *succession* is possible only through time. Therefore, time can also be defined as the possibility of opposite determinations of the same thing.

Thus we see that the two forms of empirical representations, although they have in common infinite divisibility and infinite extension, as is well known, still are fundamentally different, so that what is essential in the *one* in the *other* has absolutely no meaning: alongside one another has no meaning in time, after one another has none in space. However, empirical representations belonging to the law-governed complex of reality appear in both forms simultaneously, and an *intimate unity* of both is even the condition of reality, which, as it were, proceeds from them as a product proceeds from its factors.[47] What creates this *union* is the understanding, which, by means of its special function, combines those heterogenous forms of sensibility [30] so that from their mutual interpenetration (although just for the understanding itself) *empirical reality* arises as a totality of representations,[e] constructing a complex held together by the forms of the principle of reason, although with problematic limits. All of the individual representations which belong to this class are a part of this complete representation, and since they are determined in this class according to the laws we know *a priori*, they assume their places in this complex, in which, therefore, countless objects exist *simultaneously* because in it, despite the ceaselessness of time, substance, i.e., matter, persists, and despite the rigid immutability of space, matter's conditions change. Thus, in brief, in this complex this entire, objective, real world exists for us. In *The World as Will and Representation*, Vol. 1, § 4 (or first edn. pp. 12ff.), the reader interested in an exposition of the analysis of empirical reality (given here only in outline) will find a closer discussion of the way to make that unity, and through it the world of experience, occur through the function of the understanding. The 4th chapter of the 2nd volume, and attentive consideration of the table of ‘Praedicabilia *a priori* of time, of space, and of matter’ is also recommended and will be essential assistance, for it makes especially clear how the counterparts of space and time balance themselves out in matter as their product, presenting themselves in the form of causality.

The function of the understanding which constitutes the basis of empirical reality should immediately be explained in detail; only beforehand the most immediate objections must be set aside through a few accompanying explanations which the basic idealistic view adhered to here could encounter.[48]

§ 19 Immediate presence of representations[49]

Now, however, even though the understanding unifies the forms of the inner and outer sense for the representation of matter and thus that of a persisting external world,[50] the subject *immediately* cognizes only through the *inner sense*, while the outer sense is the object of the inner, and [31] the inner sense in turn perceives the perceptions of the outer. Thus, with regard to the *immediate presence* of representations in its consciousness, the subject remains subordinate[a] to the conditions of *time* alone as the form of the *inner sense.*[*] So only *one* clear representation can be present to the subject at one time, although this representation can be very complicated. That representations are *immediately present* means: they are not only the unification of time and space, which the understanding (an intuitive[b] faculty, as we shall soon see) puts forth for the total representation[c] of empirical reality, but they become cognized as representations of the inner sense only in time and, indeed, at the neutral point between the two divergent directions of time, which is called the *present*. The condition, touched upon in the preceding sections, for the immediate presence of a representation of this class is its causal influence on our senses, hence on our body, which itself belongs to objects of this class, and thus is subjected to the law of causality governing in it, as is to be discussed shortly. Since for this reason, following the laws of the inner as well as the outer world, the subject cannot remain with any *one* representation, then, there is no simultaneity in mere time; thus, any representation will always disappear, driven out in turn by another, following an order not determinable *a priori*, but depending on circumstances soon to be mentioned. Moreover, that fantasy[a] and dreams reproduce the immediate presence of representations is a well-known fact, the discussion of which, however, does not belong here, but in empirical psychology. Despite the ephemerality and the isolated nature[b] of representations with respect to their immediate presence in the consciousness of the subject, the subject nonetheless has the representation of an all-comprehensive complex of reality, as I have described above, because of the function of the understanding. And so with respect to this opposition, representations have been taken for something completely different insofar as they belong to this complex[51] from the way they are taken insofar as they are immediately present [32] to consciousness. In the former capacity they are called *real things*, but only in the latter are they called representations *par excellence*.[c] This view of the matter, which is common, is called *realism*, as is well known. With the appearance of modern philosophy *idealism* has set itself in opposition to it and has increasingly won the day. First advocated by Malebranche and Berkeley, it was raised to a higher power by Kant, to transcendental idealism, which made conceivable the coexistence of the empirical reality of things with their transcendental ideality, and accordingly, Kant says this, among other things, in the *Critique of Pure Reason*: 'I understand by transcendental idealism of all appearances the doctrine that we are to regard them altogether as mere representations and not as things in themselves.' And again in the remark: 'space itself is nothing other than representation; consequently, only what is contained in space must be contained in the representation, and there is even nothing in space except that which is actually represented in it.' ('Critique of the 4th Paralogism of Transcendental Psychology', pp. 369 and 375 of the first edn.[d]) Finally in the 'Observation' appended to the same chapter, he says: 'if I were to remove the thinking subject, the whole physical world falls away, as this is nothing other than appearance in the sensibility of our subject and a type of its representations.'[e] In India, in Brahmanism as well as in Buddhism, idealism is even the doctrine of folk religion; only in Europe is it paradoxical, as a result of the essentially and inevitably realistic fundamental view of Judaism. But realism overlooks[52] the fact that the so-called being of these real things *is absolutely nothing else than their being* *represented*;[f] or, if one insists in calling only that which is in the immediate present of the subject's consciousness an actual,[a] representation, then it is just an ability to be represented potentially.[b] Realism overlooks the fact that the object no longer remains object apart from its reference[c] to the subject, and that, if one takes this away or abstracts from it, all objective existence is also immediately nullified.[53] *Leibniz*, who indeed felt the object's being conditioned by the subject, and who was nonetheless unable to free himself from the thought of objects existing in themselves[d] independent of their reference to the subject, i.e., of their *being represented*, [33] first assumed a world quite identical to and running parallel to the world of representation, a world which, however, was not directly bound with the other, but only externally, by means of a pre-established harmony[e] – apparently the most superfluous thing in the world since it itself never occurs in perception, and it takes its own path apart from the quite identical world of representation. But then again, when he wanted more closely to determine the essence of things objectively existing in and of themselves, he came upon the necessity of explaining the objects in themselves as subjects (monads[f]), and in this way he gave the most eloquent proof that our consciousness (insofar as it is something which merely cognizes, and is thus within the limits of the intellect, i.e., the apparatus for the representing the world) can find nothing beyond the subject and object, that which represents and the representation;[54] and thus, if we have abstracted from the objective existence of an object[g] (from its being represented), i.e., if we have nullified it as such, and we still want to posit something, we will meet up with absolutely nothing other than *the subject.* But conversely, if we want to abstract from the subjective existence of the subject[h] and still have something left over, the converse case occurs, which develops into *materialism*.

Spinoza, who never came to understand the matter and, therefore, did not arrive at clear conceptions, had nevertheless understood[55] very well the necessary relation between object and subject which is so essential to them that it is the very condition of their conceivability, and therefore he had depicted them as an identity in the single existing substance between that which knows and that which is extended.[56]

> Note: Given the opportunity of the principal discussion of this section, I note that, if in the course of this treatise, in order to be brief and easily understood, I make use of the expression *real objects*, nothing is to be understood by this other than just connected, intuitive representations creating the complex of empirical reality that, in itself, always remains ideal.[57]

[34] § 20 Principle of sufficient reason of becoming[58]

In the present class of objects for the subject, the principle of sufficient reason appears as[59] *the law of causality*, and as such I call it the *principle of sufficient reason of becoming*, *principium rationis sufficientis fiendi*. All objects that presents themselves in the totality of representations that constitutes the complex of empirical reality[a] as regards the appearance and disappearance of their states, are, interconnected through this principle and thus in the direction of the course of time.[60] This principle is as follows. If a new state of one or more real objects appears, then there must be another, previous state from which the new one follows according to a rule,[b] i.e., as often as the first exists, every time. Such a sequence is called a *consequence*,[c] the first state a *cause*, the second an *effect*. E.g.: if a body ignites, then this state of burning must be preceded by 1) a state of affinity to oxygen, 2) a state of contact with oxygen, 3) a state of a certain temperature. For the ignition must follow immediately, as soon as the first state was at hand, but this ignition has occurred just now, so the first state could not always have been present; rather, it must have appeared just now. This appearance is called an *alteration*. Therefore, the law of causality stands in exclusive relation to *alterations* and always affects only these. With its appearance, every effect is an *alteration*, and just because it did not appear earlier, it provides unerring proof of another *alteration* preceding it, which, in relation to it, is called *cause*; but this last, in relation to a third *alteration* that again necessarily precedes it, is called *effect*. This is the chain of causality; it is necessarily without beginning. Accordingly, any state that occurs has followed from a preceding alteration: e.g. as in our example above when free heat is applied to a body from which an increase of temperature had to follow, this application of heat is again occasioned by a preceding alteration, e.g., the sun's rays falling on a burning lens [35] , this perhaps by a cloud's moving away from the direction of the sun, this by wind, this by uneven density of air, this by other states, and so on to infinity.[d] When all determining factors,[e] except *one*, obtain for the occurrence of a new state, this *one* – if it appears just now, that is, last – will be called cause *par excellence*.[a] Indeed, this is correct insofar as by that is meant the final alteration, the one which is certainly decisive. Except that it is the last to appear, one determining factor of the causal state has no advantage over any others in identifying the causal connections of things in general. In the example just mentioned, the cloud's moving away is indeed to be called the cause of the ignition insofar as it occurs later than the burning lens being directed at the object; however, this could have occurred later than the cloud's moving away, and the addition of oxygen could have occurred even later than this: in that respect, such chance determinations of time[b] have decided which is the cause. On the contrary, if we consider more accurately, we find that the *entire state* is the cause of what results, and it is essentially indifferent in which order in time[c] its determining factors have come together. Consequently with regard to a given, individual case, the determining factor of a state which occurs last may be called the cause *par excellence*[d] because it completes the number of necessary[e] conditions; that is, its occurrence is the decisive alteration. However, for universal[f] considerations, only the *entire* state leading to the occurrence of the state following it can be considered the cause. But the various, individual determining factors, which, taken together, just complete and comprise the cause, can be called the causal moments[g] or even the *conditions*, and thus the cause can be divided into these. In contrast, it is completely false for the objects, but not the state, to be called the cause: e.g. in the case just mentioned some would call the burning lens the cause of the ignition, others the cloud, others the sun, others oxygen, arbitrarily, according to their preference. But there is absolutely no sense in saying that an object is the cause of another, first of all because objects contain not merely form and quality, but also [36] *matter*, but this neither arises nor perishes; and because the law of causality refers exclusively to *alterations*, i.e., to the appearance and disappearance of states in time, as this law regulates the very relation in regard to which the earlier is called *cause*, the later *effect*, and their necessary connection *consequence.*

I refer the reflective reader here to the explanation that I have provided in *The World as Will and Representation* Vol. 2, chap. 4, especially pp. 42ff.[h] For it is of the greatest importance that there be completely distinct and firm concepts of the true and actual meaning of the causal law as well as the range of its application, and above all, that it be clearly recognized that the causal law solely and exclusively refers to *alterations* of material states and to absolutely nothing else; consequently, this law should not be introduced where *these* are not under consideration. It is the regulator of *alterations* of objects of outer *experience* appearing in time, but these are altogether material. Any alteration can only occur when another, determined according to a rule, has preceded it, but through which, then, it occurs as necessarily brought about: this necessity is the causal nexus.

Yet as simple as the law of causality is, from the most ancient times to the most recent we find it expressed quite differently as a rule in manuals on philosophy, that is, conceived more abstractly, and thus more broadly and indeterminately. In these, for instance, a cause is called that through which something else is brought into existence or something else is produced, made actual, etc.; as Wolff says 'a cause is a principle on which the existence or actuality of another entity depends'.[a] Now causality obviously concerns only alterations of forms of uncreated, indestructible matter; whereas, an actual origination,[b] a coming-into-being,[c] of that which previously had not been, is an impossibility. For the most part we may blame such traditional, overly broad, distorted, and false conceptions of causal relation on unclarity of thought, but certainly along with this, there also lurks intent [37] – specifically theological intent – already ogling the cosmological proof from a distance, ready to serve this proof, ready even to falsify transcendental, *a priori* truths (the mother's milk of human understanding). This is seen most clearly in Thomas Brown's *On the Relation of Cause and Effect*, a book numbering 460 pages, which in 1835 had already gone through its fourth edition, and since then probably many more, and which, despite his tedious, rambling, academic prolixity, does not treat his subject badly. Now this Englishman has quite correctly recognized that the law of causality always concerns *alterations*, and that any effect is an *alteration*. However, that any cause is likewise an *alteration,* from which it follows that the whole affair is merely an uninterrupted nexus of *alterations* succeeding one another in time – this he will not admit, although it cannot possibly have escaped his notice. Rather, he always most awkwardly calls the cause an *object*, or even a substance, that *precedes* the alteration, and with this utterly false expression, which generally spoils his explanations, throughout his whole, lengthy book he twists and tortures himself pitifully, against his better knowledge and *conscience*, simply and solely so that his presentation does not stand in the way of the cosmological proof that is somewhat tangential and will someday be advanced elsewhere by others. – Indeed, what must be the state of such a truth, for which the way is paved from a distance through such trickery?

But then what, for their part, have our good, honest, German professors of philosophy, who value spirit[a] and truth above all, done for the precious cosmological proof, especially after *Kant*, in the critique of reason,[b] dealt it a deadly wound? Of course, the good advice there was costly (and they know it, these worthies, even if they will not admit it), since *first cause*[c] is just the same as *cause of itself*,[d] a contradiction in terms,[e] although the former expression is used more frequently than the latter and is pronounced with a quite serious, even solemn demeanour; indeed, many, especially English Reverends, devoutly roll their eyes upward when with emphasis and feeling they utter 'the first cause'[f] – that [38] contradiction in terms. They know it: a first cause is just as inconceivable as is a point at which space has an end or a moment when time takes its beginning. For every cause is an *alteration*, and one must necessarily ask about the alteration preceding it, by which *it* was brought about, and so on *in infinitum, in infinitum*! It is inconceivable that there ever was a first state of matter, from which, while it had not always been, everything following it would have proceeded. For, had this state in itself been their cause, then they would have had to exist always, so that the state which now exists does not first exist now. But if at a specific time it first began to be causal, then at that time something must have *altered* it, whereby it ceased to rest; but then something has come about, an alteration has occurred, about the cause of which – i.e. about an alteration preceding *it* – we must immediately ask, and we are again on the ladder of causes and are whipped on higher and higher by the inexorable law of causality – *in infinitum, in infinitum*. (Will these gentlemen still not be ashamed to speak to me of an origin of matter out of nothing? Corollaries await below to attend to them.) Thus the law of causality is not so obliging as to allow itself to be used like a hackney cab, which one can send off after one reaches one's destination. It is much more like the broom brought to life by Goethe's sorcerer's apprentice, which once set in motion will not stop running and drawing water so that only the old wizard himself is able to put a stop to it. But these gentlemen, one and all, are no wizards. So what have they done, these noble and righteous friends of truth, these, who at all times wait for the meritorious in their subject in order to proclaim it to the world as soon as it shows itself; these who, when someone comes who really is what they only pretend to be, far from wanting to suppress his works through clever silence and cowardly secreting, will rather be the immediate heralds of his merit – certainly, as certainly, as is well known, as folly loves understanding above all. So what have they done for their old friend, the hard-pressed cosmological proof, already lying half dead? – Oh, they have [39] devised a fine trick: 'Friend', they have said to it, 'things go badly for you, very badly, since your fatal encounter[a] with the stubborn old mule of Königsberg, as badly – as with your brothers, the ontological and the physico-theological proofs. But have faith, *we* will not abandon you because of this (we are paid for this, you know). However – there is nothing else to do – you must change your name and clothing, for if we call you by your name, everyone runs from us. But if, as you are incognito, we take you by the arm and once again introduce you into society – but only, as we said, incognito – then everything will be fine! So first, from now on your object takes the name of "the absolute"; that has a foreign, decorous and noble ring – and we know best how much can be accomplished among the Germans by putting on an air of nobility. Everyone understands what is meant and imagines himself all the wiser. But you yourself enter disguised in the form of an enthymeme. That is, leave right at home all your prosyllogisms and premises, which you use to drag us up the long climax; everyone knows that they amount to nothing. But as a man of few words, appearing proud, bold, and noble, you will reach your goal with a single bound: "the absolute", you exclaim (as do we, too), "then, by the devil, *that* must *be*; otherwise there would indeed be nothing"! (with this, you pound on the table). But where would it be? "Stupid question! Have I not said it was the absolute"? – That will do, upon our word, that will do! Germans are accustomed to accept words instead of ideas:[b] from childhood on we train them for it – only look at Hegelry: what is it other than empty, hollow, disgusting verbiage? And yet, how brilliant was the career of this philosophical ministerial creature! Nothing more was required for this than a few venal associates to intone the fame of the bad, and their voice found an echo which even now reverberates and spreads in the numb skulls of a thousand stooges: see how quickly out of a common mind, indeed out of a common charlatan is made a great philosopher. Thus, take heart! Moreover, friend and patron, we second[c] you in yet another way: we could not even live without you! – Has the carping old critic of Königsberg criticized reason and clipped its wings – good! So we will invent a *new* reason of [40] which no one had heard anything until now, a reason that does not think, but immediately *intuits*,[a] intuits ideas (a superior word, created for mystification) embodied; or even *apprehends*[b] them, immediately apprehends what you and the others first wanted to prove; or – for those who concede little, but are also content with little – has a *presentiment*[c] of it. We pass off popular ideas inculcated early as immediate inspirations of this, our new reason, i.e. actually as inspirations from above. But we denigrate the old, discredited reason, calling it *understanding* and sending it packing. And the true, real understanding? – what in all the world does true, real understanding have to do with us? – You smile incredulously. But we know our public and the *harum horum*, which we have before us on the benches. Bacon of Verulam already said ‘at the universities, young people learn to believe’.[d] There they can learn from us something righteous! We have some good advice on the articles of faith. – If despair overcomes you, always remember that we are in Germany where we have been able to do what would have been possible nowhere else: namely to proclaim as a great mind and profound thinker a mindless, ignorant, nonsense-spreading philosophaster who, through unprecedented, hollow verbiage, thoroughly and permanently disorganizes their brains. I mean our dear Hegel. And we have been able to do so not only with impunity and even without being mocked – but truly, they believe it, they have believed it for thirty years, up to the present day! – Thus, despite Kant and his critique, if, with your assistance, we have the absolute, we are safe. – Then we will philosophize from top down, from this absolute, by means of deductions of the most diverse kinds, only similar to one another through their agonizing tediousness, producing the world, and calling the latter the finite as well as the former the infinite – which again provides a pleasurable variation of verbosity – and we will always only speak in general about God, explaining how, why, wherefor, and for what reason, through which voluntary or involuntary process, he made the world or gave birth to it; whether he is outside it; whether he is in it, etc.; as if philosophy were theology and sought not enlightenment about the world, but about God.'

Thus [41] the cosmological proof, which this apostrophe addressed and which we are concerned with here, actually consists in the assertion that the principle of reason of becoming, or the law of causality, necessarily leads to a thought by which the law itself will be abolished and declared null and void. For one attains the first cause[e] (the absolute) only by ascending from consequent to ground, via a series as long as you please. But in this series one cannot stop without annulling the principle of reason.

Now that I have briefly and clearly demonstrated the invalidity of the cosmological proof, as I have that of the ontological proof in the second chapter, perhaps the sympathetic reader will wish to see done what is necessary with the physico-theological, which has more plausibility. Except this is completely out of place, since its subject belongs to a completely different area of philosophy. Thus with regard to the sympathetic reader, I refer him to begin with to Kant's *Critique of Pure Reason*[a] and expressly[b] to his *Critique of the Power of Judgement*,[c] and to supplement his purely negative method, to my positive one in *On Will in Nature*,[d] that publication slender in size, rich and weighty in content. In contrast, the unsympathetic reader may pass this and all my writings intact to his grandchildren. It concerns me little, since I am not here for one generation, but for many.

As will be proved in the next section, since the law of causality is known to us *a priori* and, thus, is transcendental, valid for every possible experience, hence without exception; and further, since this law establishes that from a definitely given, relatively first state, a second, equally definite state must follow according to a rule, i.e. every time, then the relation of the cause to the effect is a necessary one; accordingly, the law of causality warrants hypothetical judgements and thereby proves itself to be a form of the principle of sufficient reason, on which all hypothetical judgements must be supported and on which all necessity rests, as will be shown later.

I call this form of our principle the principle of sufficient reason of *becoming* because its [42] application at all times presupposes an alteration, the appearance of a new state, thus a becoming. Further, it belongs to its essential character that the cause always precede the effect in time (cf. § 47.), and only through this will it be first recognized which of the two states bound by the causal nexus is cause and which effect. Conversely, there are cases in which the causal nexus is known to us from previous experience, but in which the succession of states follows so rapidly that it escapes our perception. Then, with complete certainty, we conclude from the causality to the succession, e.g., that the ignition of the powder precedes the explosion. On this, I refer the reader to *The World as Will and Representation*, Vol. 2, chap. 4, p. 41 of the 2nd edition.[e]

From this essential connection of causality with succession, it follows again that the concept of *reciprocal action*,[a] taken strictly, is vacuous.[b] For it presupposes that the effect has again been the cause of its cause; thus, that which follows has at the same time been that which precedes. I have fully demonstrated the inadmissibility of this favourite concept in my 'Critique of the Kantian Philosophy' appended to my *The World as Will and Representation*, pp. 517–21 of the second edition to which I, therefore, refer the reader.[c] It will be noted that, as a rule, authors make use of this concept when their views begin to become unclear; thus, its use is just as frequent. Indeed, when ideas completely run out for a writer, no word is more ready to suggest itself than *Wechselwirkung*; thus, the reader can even regard the word as a kind of warning shot indicating that the author is in deep trouble. It is useful to note that the word *Wechselwirkung* is found only in German and no other language possesses a customary equivalent to this term.

The law of causality yields two important corollaries, which just because of this, receive their verification as cognitions *a priori*, and, hence, as elevated above all doubt and allowing no exceptions. Specifically these two corollaries are the *law of inertia* and that of the *permanence of substance*. The first means that every state, including a body at rest as well as one in any kind of motion, remains unaltered, undiminished, and [43] unaugmented, and must even persist through endless time, if a cause does not appear that alters or destroys it. – However, from the other, which expresses the imperishability[d] of matter, it follows that the law of causality applies only to the *states* of bodies, thus to their rest, motion, form, and quality, directing the arising and passing of these in time. But it in no way applies to the existence of the *bearer* of these states, to which has been given the name *substance* just to express its exemption from all arising and passing. *Substance persists*; i.e. it can neither arise nor pass away; hence, the amount of substance in the world can neither be increased or diminished. That we know this *a priori* verifies our consciousness of the unshakeable certainty with which anyone who sees a given body disappear, be it through a sleight-of-hand trick, or disintegration, or burning, or evaporation, or whatever process, nevertheless firmly presupposes that whatever might have become of the *form* of the body, the substance, i.e., the *matter* of the body, exists undiminished and could be found somewhere else; and likewise that wherever a body not previously present is found, it must have been brought there or coalesced out of invisible particles, perhaps through precipitation. However, this is never the case with regard to its substance (matter), for that it could come into existence implies a complete impossibility and is absolutely inconceivable. The certainty with which we assert this in advance (*a priori*) arises from the fact that our understanding completely lacks a form for thinking of the arising or passing away of matter, while the law of causality, which alone is the form under which we are able to think of alterations at all, still always applies to the *states* of bodies, never to the existence of the *bearer* of all states, *matter*. For this reason I assert the principle of the permanence of substance as a corollary of the causal law. Moreover, we could never have attained *a posteriori* the conviction of the permanence of substance, in part because, in most cases, the state of affairs[a] is impossible to verify empirically, in part because all empirical knowledge,[b] gained simply through induction, has always only approximate, [44] hence precarious, but never unconditional certainty. Therefore the certainty of our conviction of this principle is also of a completely different kind and nature from that of the correctness of some *empirically* discovered natural law, in that it has a completely different and fully unshakeable, unwavering firmness. This is so, just because this principle expresses a *transcendental* cognition, i.e., one that determines and fixes prior to all experience any possibility in all experience, but just because of this the world of experience altogether reduces to a mere phenomenon of the brain. Even the most general[c] and most invariable of all the different kinds of natural laws – that of gravitation – is of empirical origin, and hence without guarantee of its universality.[d] For this reason, from time to time it is still challenged, and, likewise, doubts arise as to whether it also applies beyond our solar system. In fact, astronomers do not fail to call attention to indications and corroborations of this uncertainty, discovered on occasion, making it clear that they regard the law of gravity to be merely empirical. Of course, the question can be posed whether gravitation would occur between bodies which were separated by an *absolute* void, or whether within a solar system gravity could perhaps be mediated by an ether, and thus could not operate between fixed stars, which, then, is only to be decided empirically. This proves that here we are not dealing with *a priori* knowledge. If, in contrast, we accept the probability that, according to the Kant–Laplace hypothesis, every solar system was formed out of the gradual condensation of a primaeval nebula, we cannot for a moment think that any primordial stuff[e] would arise out of *nothing*; rather, it is necessary for us to presuppose its particles as having previously existed somewhere and having only aggregated, just because the principle of the permanence of substance is a transcendental one. Moreover, *substance* is a mere synonym for *matter* because the concept of substance is only realizable as matter and thus has its derivation[a] in matter. In my 'Critique of the Kantian Philosophy', pp. 550ff. of the 2nd edition,[b] I have thoroughly discussed this and especially demonstrated how this concept has been formed merely for an underhanded purpose. This *a priori* certain [45] imperishability of matter (called permanence of substance), like many other equally certain truths, is for professors of philosophy a forbidden fruit; therefore, they slip by it, glancing aside timidly.

The endless chain of causes and effects produces all *alterations*, yet it never extends beyond these, so two things[c] remain untouched. These are, on the one hand, *matter*, because, as has just been shown, matter is the *bearer* of all alterations or it is just that *in which* such alterations take place; and on the other hand, the original *forces of nature*, because these forces are the means *by which* alterations or effects are possible at all – the means by which causes first receive causality, i.e., efficacy,[d] which they thus merely hold in fee.[e] Cause and effect are the *alterations* connected to necessary succession in time. In contrast, the forces of nature, the means by which all causes operate, are exempted from all change;[f] thus, in this sense, they exist beyond all time, but just because of this, they exist always and everywhere, omnipresent and inexhaustible, always ready to manifest themselves as soon as and only when the occasion appears, on the guidance of causality. The cause, like its effect, is always a particular, a particular alteration. In contrast the force of nature is something universal, unalterable, existing at all times and everywhere. E.g. that amber now attracts the thread is the effect; its cause is the preceding friction and present proximity of the amber, and the natural force active in this process, directing it, is electricity. The explanation of the subject is found in a detailed example in *The World as Will and Representation*, Vol. 1, § 26, pp. 153ff. of the 2nd edition,[g] where I have indicated how, in a long chain of causes and effects, the most diverse forces of nature successively appear and come into play. Through this explanation, the distinction between cause and force of nature, the fleeting phenomenon and the eternal form of activity, will then be readily understood. And since in that work the entire § 26 is devoted to this investigation, it suffices here to put the matter briefly. The *norm* that a force of nature follows, with respect to its *appearance* in the chain of [46] causes and effects, and thus the bond connecting it with this, is the *law of nature*. However, the confusion of natural force with cause is as frequent as it is pernicious to clarity of thought. It even appears that before me these concepts have never been purely sorted out, no matter how great is the need. Not only were forces of nature even made into causes when electricity, gravity, etc. were said to be causes, but many even make them into effects by asking about a cause of electricity, of gravity, etc. which is absurd. However, it is something completely different when the number of forces of nature are thereby diminished, in that one is reduced to another, as, in our time, magnetism is reduced to electricity. But every *genuine* (actually original) force of nature, to which every fundamental chemical property[a] belongs, is essentially an occult quality,[b] i.e., no longer capable of physical explanation, but only of a metaphysical one, i.e., one transcending appearance. But no one has taken this confusion, or rather, identification, of a force of nature with a cause, further than *Maine de Biran* in his *Nouvelles considérations des rapports du physique au moral*[c] because this is essential for his philosophy. Besides, it is noteworthy that when he speaks of causes, he almost never puts ‘cause’ alone, but almost every time says ‘cause or force’,[d] just as we saw above in § 8 how Spinoza put ‘reason or cause’[e] eight times on a single page. So both are conscious of identifying two disparate concepts in order to be able to apply first the one, then the other, depending on the circumstances. And to this end they are compelled always to keep the identification before the reader.

Causality, this director of each and every alteration, now appears in nature in *three* different forms: as *cause* in the narrowest sense, as *stimulus*, and as *motive*. The true and essential distinction among inorganic bodies, plants, and animals depends on precisely this difference, not on external anatomical or chemical characteristics.

Cause in the narrowest sense is that according to which the alterations in the *inorganic* kingdom result; thus, these effects are the theme of mechanics, of [47] physics, and of chemistry. The third Newtonian principle, ‘action and reaction[f] are equal to one another’, applies only to cause in the narrowest sense: this means that the preceding state (the cause) undergoes an alteration which in magnitude equals the alteration (the effect) which that state has brought about. Further it is only with this form of causality that the degree of the effect always corresponds exactly to the degree of the cause so that the one can be calculated from the other and vice-versa.

The second form of causality is *stimulus*: it governs organic life as such, thus that of plants, of the vegetative, or the part of animal life without consciousness, which, in fact, is just a plant life. It is characterized through the absence of the distinguishing marks of the first form. Thus action and reaction are not equal to one another and the intensity of the effect in no way follows, through all degrees, the intensity of the cause. Moreover, through an intensification of the cause, the effect may even be turned into its opposite.

The third form of causality is *motive*: this form of causality directs animal life proper, thus their doings, i.e., the external actions consciously performed by all animal beings. The medium of motives is *cognition*: consequently the receptivity for motives requires an intellect. Therefore the true characteristic of the animal is cognizing, forming representations. The animal moves, as animal, always toward an aim and end; therefore, it must have *cognized* these; i.e. these must have presented themselves to it as something different from itself, but of which it is conscious. From this it follows that the animal is to be defined as ‘that which cognizes’: no other definition catches what is essential; indeed, perhaps none other holds water. A lack of cognition necessarily implies a lack of movement from motives; then, only movement from stimulus remains, that is, plant life; thus, irritability and sensibility are inseparable. But the motive's way of operating is obviously different from that of a stimulus: the influence of a motive can be very brief; indeed, it need only be for a moment. For its effectiveness, unlike that of a stimulus, does not have any sort of relation to its duration, to the proximity of the object, and the like. Rather the motive only needs to be perceived in order to operate, while a stimulus [48] always requires contacts, often even intussusception, but always of a certain duration.

This short statement of the three forms of causality is sufficient here. The detailed presentation is found in my prize essay on freedom (pp. 30–4 of *The Two Fundamental Problems of Ethics*).[a] Only one thing is to be emphasized here. The distinction between cause, stimulus, and motive is obviously merely the result of a being's degree of *receptivity*: the greater the receptivity, the more subtle the mode of influence can be.[b] A stone must be shoved; the human being obeys a glance. Both, however, will be moved by a sufficient cause, thus with equal necessity. For motivation is merely causality proceeding by cognition. The intellect is the medium of motives because it is the highest intensification[a] of receptivity. But through this the law of causality loses absolutely nothing of its certainty and rigour. The motive is a cause and operates with the necessity that all causality entails. This necessity is obvious among animals, whose intellect is a simpler one and, thus, only provides cognition of the present. The intellect of the human is doubled: in addition to the intuitive, he also has abstract cognition, which is not bound to the present; i.e. he has reason. Therefore, given clear consciousness, he has an elective decision[b]: namely he can carefully balance mutually exclusive motives as such against one another; i.e. he can let them try their power on his will, and then the stronger will determine him, and his doings will follow with as much necessity as that with which a struck ball rolls. Freedom of will means (not in the verbiage of professors of philosophy,[c] but) ‘*that two different actions are possible for a given human in a given situation*’. But the complete *absurdity* of this assertion is a truth as certainly and clearly demonstrated as can be any truth outside the realm of pure mathematics. In my ‘Prize Essay on the Freedom of the Will’, crowned by the Royal Norwegian Society [49] of Sciences, one can find this truth presented most clearly, methodically, thoroughly, and, moreover, with particular reference to the facts of self-consciousness by which ignorant people come to believe the above-stated absurdity. In essentials, Hobbes, Spinoza, Priestley, Voltaire, even Kant, have taught the same. Now, this certainly does not stop our worthy professors of philosophy from speaking of freedom of will as a completely settled matter, quite unabashedly, as if nothing had happened.[*] What then, do these gentlemen believe to be the purpose for which the above-mentioned great men came to exist by the grace of nature? – so that *they* could live by *philosophy* – right? – But once I had presented the matter more clearly than ever had been done before in my prize essay, and moreover with the approval of a royal society that had also published my essay, then it was certainly the duty of these high-minded gentlemen to oppose such pernicious and erroneous theory and horrible heresy, and to refute it most thoroughly. Indeed, it was their duty all the more, since, in the same volume [50] (*The Two Fundamental Problems of Ethics*) along with the aforementioned essay, in the prize essay 'On the Foundation of Morals', I irrefutably and clearly demonstrated Kant's practical reason with its categorical imperative (which these gentlemen always use under the name 'moral law' as the foundation stone of their shallow moral systems) to be a completely ungrounded and futile assumption, so that a human being possessing the least spark of the power of judgement, if he read it, could no longer believe in this fiction. – 'Well, they would probably have done that' – They would be careful not to get onto slippery ground! – Silence, keeping their traps shut, that is the extent of their talent and their sole means against intellect, understanding, seriousness, and truth. My ethics is not mentioned in any of the products of their useless but prolific scribbling appearing since 1841, although the book is incontestably the most important which has appeared in ethics in the last sixty years. Indeed, so great is their fear of me and my truth that the book has never been announced in any of the literary journals issued by the universities or academies. Hush, hush,[a] so the public does not notice: this is and remains their whole policy. Of course, an instinct for self-preservation may lie at the basis of this clever behaviour. For, must not a philosophy directed by no consideration other than the truth, found among the petty systems composed among a thousand considerations by people qualified by their good disposition, play the role of an iron pot among clay pots? Their pitiful fear before my works is fear before the truth. E.g. this theory of the complete necessity of all acts of will certainly stands as a glaring contradiction of all the assumptions of their favoured spinning-wheel philosophy[b] tailored to suit Judaism. But far from being challenged, this strictly proven truth, as a certain datum and fulcrum, as a genuine 'foothold',[a] instead proves the vanity of this whole spinning-wheel philosophy and demonstrates the necessity for another view of the essence of the world and of humans, one fundamentally and incomparably more profoundly conceived – regardless of whether or not such a view can pass examinations by the professors or philosophy.[61]

[51] § 21 Apriority of the concept of causality – intellectual basis[b] of empirical intuition – the understanding[62]

In[b] the professorial philosophy of philosophy professors it will always be found that intuition of the external world is a matter of the senses, after which follows a long and wide-ranging discourse on each of the five senses. In contrast, nothing is said of the intellectual basis of intuition, namely that intuition is principally the work of the *understanding*, which by means of its unique form of causality and by means of what underlies this, pure sensibility (that is, time and space), the understanding first creates and produces this objective external world from the raw stuff[c] of a few sensations in the sense organs. And indeed, I have already advanced the main points of the subject in the first edition of the present essay from 1813, pp. 53–5[d] and soon thereafter, in 1816, I thoroughly discussed it in my essay *On Vision and Colours*,[e] a presentation for which Prof. Rosas in Vienna has shown his approval by letting it lure him into plagiarism. For the particulars, see *On Will in Nature*, p. 19.[f] In contrast, the professors of philosophy have taken little notice of this, as of other great and important truths which it has been the love and labour of my entire life to explain so that the human race may adopt them – . It is not to their taste; it does not at all suit their purpose; it leads to no theology; indeed, it is not in any way suited to the proper instruction of students for the highest purposes of the state; in short, they want to learn nothing from me, and do not see how very much they could have learned from me – everything that is, that their children, grandchildren, and great-grandchildren will learn from me. Instead of this, each of them sits down in order to enrich the public with his original thoughts in a long, spun-out metaphysics. If having fingers qualify him for this, then he is qualified. But truly, *Machiavelli* was correct when he – as Hesiod before him (*Works*, 293) – said, ‘there are three sorts of minds: first the sort who, from their own means, acquire insight and understanding of things; then the sort who recognize what is [52] correct when others explain it to them; finally the sort who are capable of neither one nor the other' (*The Prince*, chap. 22).

One must be forsaken by all the gods to believe that the intuitive world out there, filling space in its three dimensions, moving forward in the inexorably strict course of time, governed at each step by the law of causality, without exceptions, but in every detail only following the laws which we can indicate prior to all experience of them – that such a world out there is completely objective-real[a] and would be able to exist without our having anything to do with it, but then through mere sensation[b] enters our head where it now has another existence like the one outside. For what a poor thing is mere sensation, after all! Even in the most refined of sense organs, sensation is nothing more than a local, specific feeling, capable in its own way of some variation, however, in itself always subjective, which as such can contain absolutely nothing objective, and so nothing similar to an intuition. For sensation of any kind is and remains a process within the organism itself, and as such, confined to the region beneath the skin. It can, therefore, in itself, never contain something that lies beyond this skin, something that lies outside of us. Sensation can be pleasant or unpleasant – which proves a reference to our will – but nothing objective lies in sensation. The sensation in the sense organs is one heightened by the confluence of nerve-endings, and because the nerve-endings are diffuse and thinly covered, they are readily excited from the outside; moreover, they are especially open to a particular influence of some sort – light, sound, odour. However, it remains mere sensation, just like everything else in the inside of our bodies, hence, something essentially subjective, the alterations of which reach consciousness immediately, simply in the form of the *inner* sense, thus in time alone, i.e., successively. Only when the *understanding* – a function not simply of one of the delicate nerve-endings, but of the artificially[c] and enigmatically constructed brain (weighing three, and in exceptional cases five pounds) – becomes active and applies its single and only form, the *law of causality*, a powerful transformation occurs, through which subjective sensation becomes objective [53] intuition. For by means of its very own form, and thus *a priori*, i.e., *prior* to all experience (for experience is not possible until then), the understanding apprehends a given bodily sensation as an *effect* (a word which it alone understands), which, as such, must necessarily have a *cause*. At the same time, in order to place any cause *outside* the organism, the understanding takes for assistance the form of the *outer* sense, *space*, which also lies predisposed in the intellect, i.e. in the brain. For through space the outside first arises for the understanding, as the only possibility for the outside is space. Hence, pure intuition *a priori* must furnish the basis of empirical intuition. By this process, as I will soon show more precisely, the understanding takes the assistance of all, even the most minute data of a given sensation in order to construct the *cause* in space in conformity with the data. However, this operation of the understanding is not one which proceeds discursively, reflectively, abstractly[a] – by means of concepts and words – but an intuitive and completely immediate one (as, by the way, is expressly denied by Schelling, in the 1st volume of his *Philosophical Writings*, of 1809, pp. 237–8, likewise by Fries, in his *Critique of Reason*[b] Vol. 1, pp. 52–6 and 290 of the first edition). For through this operation alone, hence in the understanding and for the understanding, the objective, real, physical world presents itself, filling space in three dimensions, and then, according to the same law of causality, further alters in time, and moves in space. – Consequently, the understanding had first to create the objective world itself. It cannot, however, stroll into our head ready-made through the senses and the openings of their organs. That is, the senses provide nothing more than the raw stuff, which, by means of the simple forms of space, time, and causality (as given above), the understanding immediately recasts[c] into the objective apprehension of a physical world governed according to law. Consequently our daily, *empirical intuition* is *an intellectual one* – and it warrants this predicate – which the philosophical windbags in Germany have attributed to an alleged intuition of dream worlds where their beloved absolute is supposed to perform its evolutions. But now I will first more precisely demonstrate the great gulf between sensation and intuition as I explain how raw is the stuff from which this beautiful work proceeds.

Actually [54] only two senses serve objective intuition: touch and sight. They alone furnish the data on the basis of which the understanding, through the above-mentioned process, is able to produce the objective world. The other three senses primarily remain subjective since their sensations in fact indicate an external cause, but contain no data for determining its *spatial* relations. Now *space*, however, is the form of all intuition, i.e., of apprehension,[d] in which alone *objects* can actually present themselves. Thus, these three senses can indeed serve to announce to us the presence of an object that we acknowledge by other means, but on the basis of their data there is no spatial construction, and so no objective intuition. We can never construct the rose from the scent, and a blind person can listen to music for his whole life without achieving the least objective representation of the musicians, or the instruments, or the vibrations in the air. In contrast, hearing is of great worth as the medium of speech, making it the sense of *reason*,[a] this name even being derived from hearing, as well as the medium of music, the single way to apprehend complicated numerical relations not merely in the abstract[b] but immediately, that is, concretely.[c] But tone never indicates spatial relations, thus it never leads to the nature[d] of its cause; rather, we remain with tone itself, and so it is not a datum from which the understanding can construct the objective world. These are only sensations of touch and sight; therefore, a blind person without hands and feet could construct for himself *a priori* space in all its regularity,[e] but could achieve only a very obscure representation of the objective world. However, for all that, what touch and sight produce is still by no means intuition, but the raw stuff for intuition: in the sensations of these senses there is so little intuition that these sensations have absolutely no similarity to the properties of the things that present themselves to us by means of them, as I will soon show. Only what actually belongs to sensation must be clearly separated here from what has been added to the intuition by the intellect. At first this is difficult, because we are so accustomed to passing [55] immediately from the sensation to its cause, that this cause presents itself to us without our noticing in and for itself the sensation, which provides here, as it were, the premises for that conclusion of the understanding.

So to begin with, touch and sight have their own particular advantages, and thus, they are mutually supportive. Sight requires no contact, indeed, not even proximity: its immeasurable field extends to the stars. After all, it senses the finest nuances of light, of shadows, of colour, of transparency. It thus provides the understanding a great deal of finely determined data from which, after long practice, it constructs and immediately presents intuitions of the shape, size, distance, and nature of bodies. In contrast, touch is indeed restricted to contact, but provides such unerring and varied data that it is the most basic sense. Ultimately the perceptions of sight refer to touch; indeed, vision is to be considered an imperfect, but extensive touch that makes use of light rays as long feelers. Hence, vision is quite certainly exposed to many deceptions, as it is completely confined to properties mediated by light. Vision is one-sided, while touch provides the data for cognition of size, shape, hardness, softness, dryness, moisture, smoothness, and temperature, etc., and in this is partly aided by the shape and movement of arms, hands, and fingers, from the position of which the understanding takes away the data for spatial construction of bodies, and partly aided by muscle power, by means of which it recognizes weight, solidity, toughness or brittleness – all with minimal possibility for deception.

For all of this, these data provide absolutely no intuition; rather this remains the work of the understanding. If I press my hand against the table, then in the sensation that I receive from this lies absolutely nothing of the representation of the firm cohesion of the parts of this mass, indeed nothing even similar; rather, it is only when my understanding passes from the sensation to the cause, that it constructs a body that has the properties of solidity, impenetrability, and hardness. If in the dark, I lay my hand on a flat surface, or instead grasp a ball of some three inches in diameter, [56] then in both cases it is the same parts of my hand that sense the pressure: merely from the different position that my hand takes in one or the other case, my understanding constructs the shape of the body, the contact with which body is taken to be the cause of the sensation, and the understanding confirms the shape as I change the points of contact. If someone born blind feels a cubical body, then the sensations of his hand are completely uniform and are the same on all sides and in all directions. Indeed, the edges press a small part of his hand; nonetheless, in this sensation lies absolutely nothing similar to a cube. But his understanding draws an immediate and intuitive conclusion from the felt resistance to its cause, which now, in just this way presents itself as a firm body, and from the movements his arms make as he touches, because the sensation in his hands remains the same, he constructs the cubical shape of the body in space, which is known to him *a priori*. If he did not already have the representation of a cause and of a space, along with its laws, the image of a cube could never emerge from any succession of sensations in his hand. If one were to let a rope run through his closed hand, then, from such a position of his hand, he would construct a long, uniform body, of cylindrical form, moving in one direction as the cause of the abrasion and its duration. However, the representation of movement, i.e., the alteration of location in space, by means of time, could never arise from any mere sensation in his hand, for such a thing cannot lie in the sensation, nor can sensation alone ever produce it. Rather, in order to pass from sensation, given only empirically, to its cause and then to construct the cause as a moving body of the shape referred to above, his intellect must, prior to all experience, carry within itself the intuitions of space, time, and thereby the possibility of motion, as well as the representation of causality. For, there is a very great disparity between mere sensation in the hand and a representation of causality, materiality, and movement in space mediated through time! Sensation in the hand, even in different [57] points of contact and positions, is something much too uniform and lacking in data to make it possible to construct the representation with its three dimensions as well as the influence of the bodies on one another, including the properties of extension, impenetrability, cohesion, shape, hardness, softness, motion and rest – in short the basis of the objective world. Rather this is only possible in that space as a form of intuition, time as a form of alteration, and the law of causality as a regulator of the appearance of alterations pre-exist[a] in the intellect itself. These ready-made forms, prior to all experience, precisely constitute the intellect. Physiologically, it is a function of the brain, which learns this function from experience no more than the stomach learns to digest or the liver learns to secrete bile. This alone explains why many people born blind achieve such a complete knowledge of spatial relations that to a great extent they make up for their lack of vision and accomplish astonishing achievements, as is this case a hundred years ago with *Saunderson*, who, blind from childhood on, taught mathematics, optics, and astronomy at Cambridge. (Diderot provides a detailed report about Saunderson, *Letter on the Blind*[b].) And in the same way we can explain the opposite case of *Eva Lauk*, who, born without arms and legs, achieved a correct intuition of the external world through vision alone just as quickly as other children. (One can find a report about her in *The World as Will and Representation* Vol. 2, ch. 4.[c]) Thus all this proves that time, space, and causality do not at all come to us from the outside, neither through vision, nor through touch, but have an internal, and thus not an empirical, but an intellectual origin. From this it again follows that intuition of the physical world is in essence an intellectual process, a work of the understanding, for which sensation merely furnishes the occasion and the data to be applied in particular cases.

Now I will demonstrate the same for the sense of sight. What is immediately given here is limited to the sensation of the retina, which admits of great variety, but nonetheless can be reduced to the impression of light and dark, including their [58] intermediate degrees, and to the impression of colours proper. This impression is thoroughly subjective, i.e., existing only within the organism and under the skin. Thus without the understanding, we would only become conscious of these as particular and various modifications of the sensation in our eyes that would not be similar to the shape, position, proximity or distance of things outside us. For what provides the *sensation* in vision is nothing more than a varied affection[a] of the retina, quite similar to the view of a palette with many bright blobs of colour. Nothing more than this would remain in the consciousness of someone who is standing before an expansive, rich vista and for whom sensation remains unchanged, but for whom understanding is suddenly completely taken away (perhaps through damage to the brain). For this was the raw stuff from which previously his understanding created that intuition.

From such limited stuff as light, dark, and colours, through its very simple function of referring the effect to a cause, with the aid of the intuitive form of space given to it, the understanding can produce the visible world, so inexhaustibly rich in its many forms. Now above all, this depends on the aid provided by sensation. This first consists in the fact that, as a surface, the retina admits of a juxtaposition of impressions; second, that the light always works in straight lines, and that in the eye itself it is refracted rectilinearly; and finally that the retina possesses the capacity to immediately sense the direction from which light impinges on it, which is perhaps explained by the light rays' penetrating to the body of the retina. But the result of this is that the mere impression already indicates the direction of the cause; thus, it directly points to the location of the object which transmits or reflects the light. To be sure, the transition to this object as cause already presupposes the recognition of causal relation as well as the laws of space, but both of these are just the endowment of the *intellect*, which here has to create the intuition from the mere sensation. We will now consider its process more precisely.

The first thing which the intellect does is again to set upright the impression of the [59] object which appears on the retina upside-down. As is well known, this original reversal arises because any point of the visible object transmits its rays in straight lines in all directions. In the narrow aperture of the pupil, the rays coming from the upper end cross with those coming from the lower end, whereby the latter are upper and the former are lower, and, in the same way, those coming from the right cross to the left. The refracting apparatus in the eye, lying behind the pupil, that is, the *humor aqueus*, *lens*, and *corpus vitreum*, simply serves to concentrate the light rays passing from the object so as to find room for them on the small space of the retina. Now if vision consisted merely of sensation, then we would perceive the impression of the object reversed because we received it as such; however, in that case, we would also perceive it as something situated in the interior of the eye since we would just remain with the sensation. However, actually, the understanding steps in at once with its causal law, referring the sensed effect to its cause: having received from the sensation the datum about the direction from which the light ray arrived, it thus follows this backwards on both lines to the cause. Therefore, the crossing is now set aright in a reversal whereby the cause presents itself upright, externally, as an object in space, namely in the position from which it emitted the rays, not in the way in which they arrived (see Fig. 1). – The pure intellectual nature of the matter, to the exclusion of all extraneous grounds of explanation, particularly physiological ones, can also be confirmed by the fact that, if one sticks one's head between one's legs, or lies with one's head down a slope, one nevertheless sees things not upside-down, but quite upright, although on that portion of the retina on which usually the lower part of things appear, now the upper appears, and everything is reversed, but not the understanding.

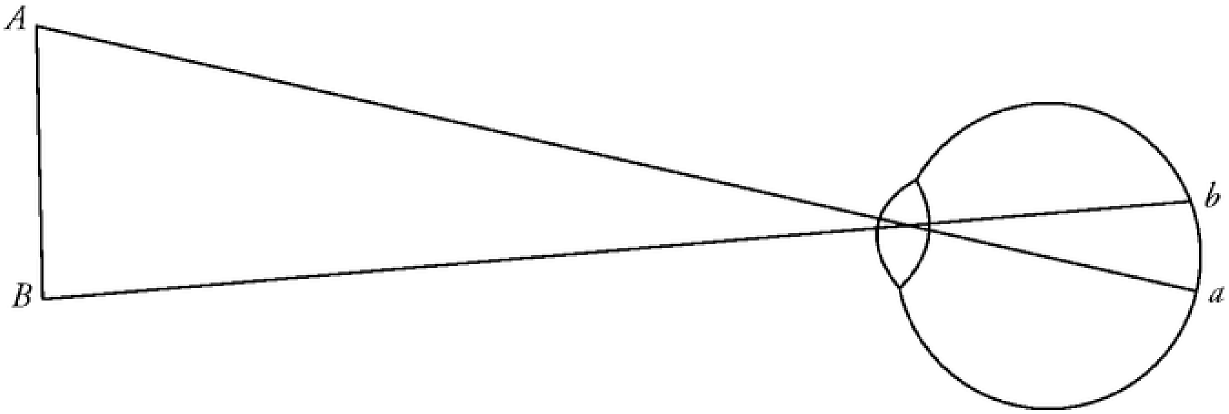

Figure 1

The second thing which the understanding produces in recasting sensation as intuition is that it makes one simple intuition of that which is sensed twice, since each eye receives the impression of the object from a somewhat different direction. The object, however, is still only presented as one, which can only happen in the understanding. The process [60] through which this comes to be is as follows. Our eyes are parallel only when we look into the distance, i.e., over 200 feet away; otherwise, we direct them both to an object to be observed, making them converge, and the two lines, one drawn from each eye up to the exact, fixed point of the object, form an *angle*, called the *optical angle*. The lines themselves, however, are called *optical axes*. When we view an object lying directly before us, these lines impinge exactly on the middle of each retina, hence, on two *points*, one in each eye, exactly *corresponding* to one another. As that which is always seeking only the *cause* of everything, the understanding immediately recognizes that even though the impression here is doubled, it nevertheless proceeds from only *one* external point, and thus has as its basis *one* cause; accordingly, this cause then presents itself as one and only one object. For everything that we intuit,[a] we intuit as *cause*, a cause of a sensed effect, hence *in the understanding*. Nevertheless, as we perceive[b] with both eyes not merely a single point, but a considerable surface of the object and still perceive only one object, the explanation just given must be carried somewhat further. Whatever lies in the object on one side of the vertex of the optical angle no longer casts its rays exactly in the mid-point of each retina, but just to the side of the retina; however, in both eyes, it casts its rays to the same side, e.g., the left side, of each retina: therefore the points on which these rays impinge, just like the middle points, *correspond to one another symmetrically*, or are *homonymous*[c] *points*. Soon the understanding becomes acquainted with these and accordingly extends the abovementioned rule of its causal apprehension to *them*. Consequently the understanding refers not only the light rays falling on the middle point of each retina, but also the light rays impinging on the remaining points that *correspond to one another symmetrically* in both retinas to one and the same point in the object transmitting such rays, and thus intuits all these points, hence the whole object, only *singularly*. At this point, it should be noted that the outer side of one retina does not correspond at all to the outer side of the other, and the inner side of the one does not correspond to the inner side of the other, but the right side of the right retina corresponds to the right side of the other, etc. Thus the matter is not to be understood in a physiological sense, but in a geometric sense. [61] A number of clear figures illustrating this process and all phenomena connected with it can be found in Robert Smith's *Optics*, and, in part, also in Kästner's German translation of 1755. I have given only *one* figure, Fig. 2, which actually presents a special case to be brought up later; however, this can serve to illustrate everything if one completely ignores point *R*. According to this figure, we always direct both eyes symmetrically in order to catch the rays emanating from the same points of the object with the points symmetrically corresponding to one another on both retinas. With movement of the eyes sideways, upwards, downwards, and in all directions, the point of the object which previously impinged on the mid-point of the retina, now impinges each time on another point, but always the homonymous point, the point corresponding to that in the other eye. If we review (*perlustare*) the object, we let our eyes glide here and there over it in order to bring each point successively into contact with the centre[a] of the retina, which sees most clearly; thus, we feel the object with our eyes. From this it is clear that single vision with two eyes is basically the same as touching a body with ten fingers, each of which receives a different impression from another direction; the collective impressions of which, however, the understanding recognizes as proceeding from a single body, the shape and size of which it then apprehends[a] and constructs in space. This is why a blind person can be a sculptor: one such was the famous *Joseph Kleinhanns*, blind since his fifth year, who died in the year 1853 in Tyrol.[*] For [62] intuition always occurs through the understanding, no matter from which sense it receives the data.

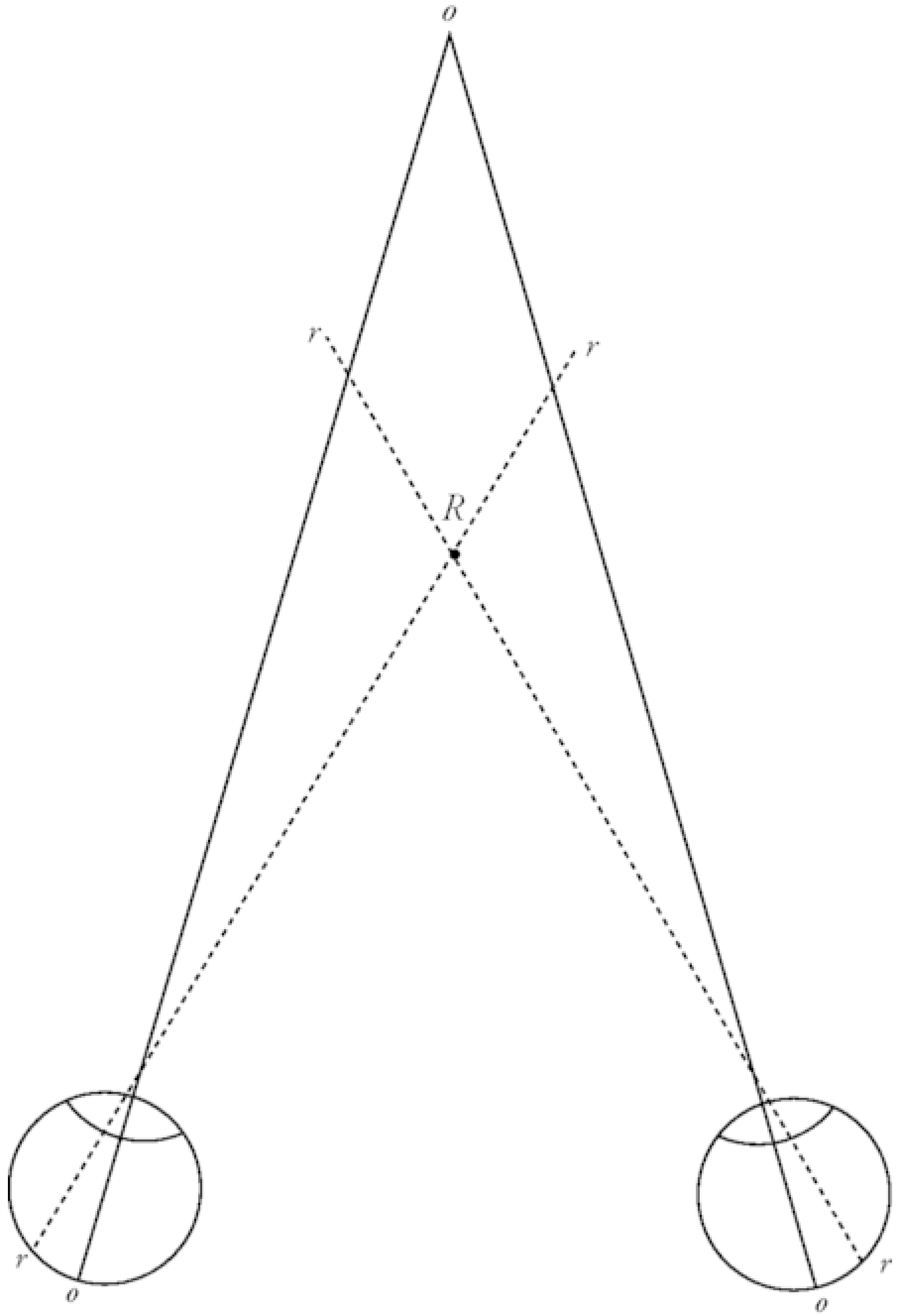

Figure 2

But now, when I touch a ball with crossed fingers, I immediately believe I have felt two balls, because the understanding, tracing back to the cause, constructing the cause according to the laws of space, and presupposing the natural position of the fingers, must attribute to two different balls the two spherical surfaces, which the outside of the middle and index finger touch simultaneously. Now it is just the same for vision: an object will appear doubled to me when my eyes no longer converge symmetrically, no longer close the optical angle on *one* point of the object, but look toward the object from different angles, i.e., when I cross my eyes. For now the rays emanating from *one* point of the object will no longer impinge on the points symmetrically corresponding to one another in the two retinas, which my understanding has become acquainted with through constant experience. Rather the rays impinge on completely different points, which, if the eyes were positioned correspondingly, could only be affected by two different bodies. Thus, I now see *two* objects because intuition occurs only through the understanding and in the understanding. – The same also occurs if the eyes are not crossed. That is, if two objects stand before me at unequal distances, and I stare at the more distant, thus closing the optical angle on it, then the rays emanating from the object standing closer will impinge on both retinas at points not symmetrically corresponding to one another. Thus my understanding will attribute them to two objects; i.e. I will see the object standing closer doubled. (On this see Fig. 2.) In contrast, if I close the optical angle on the latter as I stare at it, then for the same reason, the distant object will appear to me doubled. In order to test this, one may hold something like a pencil only two feet from his eyes and alternately look first on it and then on an object farther in the distance behind it.

But [63] best of all, one can also do the experiment reversed, so that, with two actual objects placed directly and closely before both open eyes, one still sees only *one*. This proves most strikingly that intuition in no way lies in sense impression, but occurs through an act of the understanding. Fasten together two cardboard tubes, about 8 inches long and 1½ inches in diameter, completely parallel, like binoculars, and affix an eight-penny piece before the opening of each tube. Now, putting the other end up to your eyes, look through the tubes. You will perceive only *one* eight-penny piece surrounded by *one* tube. Since both eyes are forced by the tubes into completely parallel positions, the coins will impinge exactly on the centre of the retina of each eye and upon the points surrounding the retina, hence, on the points symmetrically corresponding to one another. Hence, with nearby objects, the understanding usually, indeed, necessarily assumes the points of the optical axes to be converging, so it takes a single object to be the cause of the light streaming back; i.e. we see only one object, for the causal apprehension of the understanding is so immediate.

I do not have the space here to refute each individual attempt at a physiological explanation of single vision. However, the falsity of such explanations proceeds from the following considerations. 1) If the matter relies on an organic connection, the corresponding points in the two retinas, on which single vision demonstrably depends, must be homonymous in the *organic* sense, except, as has already been shown, they are merely so in the *geometrical* sense. For the two inner and the two outer corners of the eyes correspond to one another organically, as does everything else. Whereas, for the purpose of single vision, the right side of the right retina corresponds in the opposite way,[a] to the right side of the left retina, etc. as the phenomena explained above irrefutably elucidate. Precisely because the matter is intellectual, only the most intelligent animals, namely the higher-order mammals, as well as birds of prey, especially owls, etc. have eyes positioned so that the two axes can be directed to the same point. 2) The first of the hypotheses advanced by Newton (*Opticks*, 15th Query), that of the confluence or partial crossing [64] of the optic nerves before they enter the brain, has been proven false because then it would be impossible to see double by crossing ones eyes. Moreover, Vesalius and Caesalpinus have cited anatomical cases in which there was absolutely no intermingling; indeed, no contact between the nerves took place. Yet the subjects nonetheless had single vision. Finally, against this intermingling of the impression is the following: that if, keeping the right eye tightly closed, one looks at the sun with the left eye, one will see a long-lasting image of the glare only in the left eye, never in the right eye, or vice-versa.

The third means by which the understanding recasts sensation as intuition is by constructing bodies from mere surfaces previously obtained. The understanding thus adds the third dimension as it causally estimates the extension of bodies into that dimension (in space, of which it is conscious *a priori*) according to the type of the bodies' influence[a] on the eye and the gradations of light and shadow. While objects fill space in all three dimensions, they can only affect[b] the eye in two: as a result of the nature of the organ, sensation in vision is merely planimetric, not stereometric. Everything stereometric in intuition is first added by the understanding. Its only data for this are the direction from which the eye receives the impression, the limits[c] of the impression, and the different degrees of light and dark, data which immediately indicate their cause and through which, e.g., we recognize if we have before us a disk or a ball. This operation of the understanding, like the previous one, is also completed so immediately and quickly that we are conscious of nothing but the mere result. Hence perspective drawing is such a difficult problem that it is to be solved only by mathematical principles and must first be learned, even though it produces nothing more than a presentation of the sensation of vision just as such data exist prior to this third operation of the understanding. Thus perspective drawing presents vision in its mere planimetric extension. When one views a drawing, just as when one views reality, the understanding immediately adds the third dimension to the *two* dimensions given in the drawing. Put another way, such perspective drawing is like [65] printing, which anyone can read, but which few can write because our intuitive understanding apprehends the effect only so it can construct the cause out of it, but then immediately disregards the effect completely. Therefore we immediately recognize, e.g., a chair in any possible position, but to draw it in any position is a matter of that art which abstracts from this third operation of the understanding in order to portray only the data of the chair for the viewer to complete. As I said, this is primarily the art of perspective drawing, but then in an all-encompassing sense that of the art of painting. The picture provides lines drawn in accordance with the rules of perspective, light and dark points in proportion to the effect of light and shadow, and finally patches of colour in quality and intensity learned from experience. The viewer interprets[a] this picture because he assumes the usual causes from similar effects. The art of the painter consists in his knowing with discernment[b] how to retain the data of sensations from vision as they are *prior* to this third operation of the understanding while the rest of us toss them away as soon as we have made the above-mentioned use of them without taking them into memory. We will become even more precisely acquainted with the third operation of the understanding considered here because we will now proceed to a fourth, which, being very closely related, elucidates it.

This fourth operation of the understanding consists in the cognition of the distance of objects from us. This, however, is just the third dimension which we discussed above. Indeed, as has already been said, the sensation in vision provides us with the *direction* in which objects lie, but not their *distance*, and thus not their *location*. Thus the distance must first be brought out by the *understanding*, consequently it results from pure *causal* determinations. Now the *visual angle* is preeminent among those from which the object presents itself; nonetheless, this is completely ambiguous and from it alone nothing can be decided. It is like a word with two meanings: one must first surmise from the context what is meant. For from the same visual angle an object can be small and near or large and distant. Only if we have known its size by other means can we recognize its distance by the visual angle, [66] and conversely, we can know its size when its distance is known to us. Linear perspective depends on the diminution of the visual angle as a result of distance, the principles of which can be readily derived. That is, because our eyesight can reach equally to all sides, we actually see everything like a hollow sphere, in the centre of which the eye stands. Now first this sphere has an endless number of intersecting circles in all directions, and the angles, the size of which are given by the parts of these circles, are the possible visual angles. Second, this sphere becomes larger or smaller depending on whether we assume its radius to be longer or shorter. Therefore we can think of it as consisting of infinitely many concentric and transparent hollow spheres. Since all the radii diverge, these concentric hollow spheres are larger in proportion to the distance they stand from us, and with them the degrees of their intersecting circles increase, and so the true size of the object occupying these degrees also increases. Therefore, these objects are larger or smaller according to whether they occupy the same part, e.g., 10°, of a larger or smaller hollow sphere. Their visual angle meanwhile is the same in both cases, so that it remains undecided as to whether the object occupies 10° of a sphere of 2 miles or of 10 feet in diameter. Conversely, if the size of this object has been ascertained, then the number of degrees that it occupies will diminish in proportion as the hollow sphere to which we transfer it is more distant and, therefore, larger. Hence all of its limits will contract proportionately. From this, the fundamental rule of all perspective follows. For, since objects and the space between them must diminish in constant proportion to their distance from us, as a result of which all limits contract, the consequence will be that with increasing distance, everything lying above us descends, everything lying below us ascends, and everything lying to the sides contracts. As long as we have before us an uninterrupted sequence[a] of visibly connected objects, we can certainly recognize the distance from this constant convergence of all lines, that is, from linear perspective. However, we could not do this from the mere visual angle alone; rather, the understanding must always use the aid of another datum, which serves as a sort of commentary to the visual angle, [67] since it indicates with certainty the share[b] that distance has in the angle. Of such data there are primarily four types, of which I will give a closer account. By means of these, even when I lack linear perspective, it happens that although a human being who stands 100 feet from me appears 24 times smaller in visual angle than when he stands 2 feet from me, I nonetheless, in most cases, immediately apprehend his size correctly, which yet again proves that intuition is intellectual and not merely sensuous. – A special and interesting proof of the foundation of linear perspective presented here, as well as the intellectual nature of intuition in general, is the following. When, as a result of staring for a long time at a coloured object of definite outline, I still see the physiological coloured spectrum[c] of this object (as when, e.g., a red cross leaves a spectrum of a green cross), then this spectrum will appear to me to be larger as the surface on which I project it is more distant, and smaller as the surface is closer. For the spectrum itself takes up[d] a part of my retina which is definite and which does not change, the point first stimulated by the red cross, and so, because the spectrum was projected, i.e., was apprehended as an effect of an external object, it thus creates a visual angle of the object, given once and for all, of, let us say, 2°. If (in this case, where all commentary to the visual angle is lacking) I shift this angle to a distant surface, with which I inevitably identify it, as belonging to its effect, then it is 2° of a distant, and therefore much greater sphere, that the cross takes up, hence the cross is large. In contrast, if I cast the afterimage on a nearby object, it then fills 2° of a smaller sphere, and is therefore small. In both cases, the intuition proves to be completely objective, completely equal to that of an external object, and thereby proves the intellectual nature of all objective intuition because indeed it proceeds from a completely subjective ground (the afterimage stimulated in a completely different way). – Concerning this fact (which I have a vivid and detailed memory of having first noticed in the year 1815), there appeared an article in *Comptes rendus* of 2 August 1858, by Mr Séguin who served up the matter as a new discovery and gave all sorts of distorted and silly explanations. At every opportunity, the illustrious colleagues[a] of this gentleman pile experiment upon experiment, the more complicated [68] the better. *Expérience!* is their only solution: but a little correct and genuine reflection on the observed phenomena is seldom to be encountered: *expérience! expérience!* and stuff and nonsense to boot.

Thus, among the above-mentioned subsidiary data,[b] which provide the commentary on the given visual angle, belong first the inner alterations of the eye, by means of which the eye accommodates its optical refractory apparatus to different distances by increasing or diminishing refraction. But now what these physiological alterations consist of has still not been worked out. Sometimes they have been sought in the increase of the convexity of the *cornea*, sometimes that of the *lens*, but the most recent theory (which, however, was already expressed in substance by *Kepler*) is to me the more probable, according to which the lens recedes for distant vision, but moves forward for near, and at the same time with lateral pressure it becomes more convex, and in this case, the process of the mechanism of opera glasses would be completely analogous. One may find this theory set forth thoroughly in A. Hueck's treatise *The Movement of the Crystal Lens*, 1841. In any case we have from this inner alteration of the eye, if not a clear perception, still a certain sensation, and we use this immediately to estimate the distance. However, since these alterations just serve to make completely clear vision possible from some 7 inches up to 16 feet, the aforementioned datum is applicable for the understanding only within this distance.

However, in addition to this, the second datum is used, that is, the *optical angle* formed by the two optical axes already explained above with regard to simple vision. Obviously the more distant the object, the smaller the angle becomes, and the nearer the object, the larger it becomes. This different adjustment of the eyes to one another is not without a certain, subtle sensation, which, however, comes into consciousness only insofar as the understanding uses it as datum for its intuitive judgement of distance. Moreover, this datum reveals not merely distance, but also exactly the *location* of the object, by means of the parallax of the eyes, which consists in the fact that each eye sees the object in a somewhat different direction, which is why it appears to jerk [69] when one closes one eye. Hence with one eye closed, one will not easily be able to snuff out a lamp because this datum is missing. However, as soon as the object lies 200 feet or more distant, the eyes become parallel and thus the optical angle completely disappears, so this datum applies only within the aforementioned distance.

Beyond this, *atmospheric perspective* aids the understanding by indicating to the understanding greater distance as colours become dull, as physical blue appears before all dark objects (according to Goethe's perfectly true and correct colour theory), and as contours become blurred. Because of the great clarity of the air, this datum is very weak in Italy; hence, there it readily misleads us: e.g. Tivoli appears very close when seen from Frascati. In contrast, in a fog, which is an abnormal enhancement of this datum, all objects appear larger to us because the understanding takes them to be more distant.

Finally, there still remains for us the estimation of distance by means of intervening objects whose sizes are known to us intuitively,[a] such as fields, streams, woods, etc. The estimation is only applicable to an unbroken connection, thus only to terrestrial, not to celestial objects. In general we are more practised at using it in horizontal than in vertical orientation.[a] Thus a ball on a tower 200 feet high appears to us much smaller than when it lies on the ground 200 feet from us because in the latter case we estimate the distance more accurately. Whenever we see people in such a way that whatever lies between them and us remains to a great extent obscured, they appear to us strikingly small.

This last way of estimating applies reliably only to terrestrial objects and in horizontal orientation, and we can partly attribute to it the fact that when we look toward the horizon our intuitive understanding takes everything to be more distant and thus larger than in a vertical orientation – and partly to estimation by atmospheric perspective, to which the same applies. Because of this, it occurs that the moon appears so much larger on the horizon than at its zenith; whereas its visual angle, accurately measured, and thus the image [70] which it casts on the eye, is certainly no greater. For the same reason, too, the firmament presents itself as flattened out, i.e., extended wider horizontally than vertically. Thus both are purely intellectual or cerebral, not optical or sensuous. The objection that, even when at its zenith, the moon is sometimes dimmed and still does not appear larger, is to be refuted by the fact that at the same point the moon does not appear red, because its dimness is caused by a thicker haze, and thus by a means other than atmospheric perspective. This objection is also to be refuted by the fact that, as was said, we apply this estimation only to horizontal and not to vertical orientation, and also at this point other correctives occur. From

Mont Blanc, *Saussure* is said to have seen so enormous a rising moon that he did not recognize it and fainted with terror.

In contrast, the action of the telescope and magnifying glass depends on isolated estimation by visual angle, with size estimated through distance and distance through size, because here the other four supplementary means of estimation are excluded. The telescope actually magnifies, but it appears merely to bring things nearer, because we recognize the size of the objects empirically, and now we explain the apparent increase in size by the shorter distance. So, e.g., seen through a telescope, a house appears not 10 times larger, but 10 times closer. In contrast, the magnifying glass does not actually magnify; rather, it merely makes it possible for us to bring the object so much nearer to the eye than we could otherwise do, and the object appears only as large as it would appear at such a short distance without the magnifying glass. Specifically, the convexity of the *lens* and *cornea* do not permit us to see clearly at a distance of less than 8–10 inches from the eye; however, instead of the eye, the convexity of the magnifying glass now increases the refraction; so even at ½ inch distance from the eye, we still obtain a clear image. Our understanding places the object seen at such proximity and in corresponding size at the natural distance for clear vision, that is 8–10 inches from the eye, and now estimates it size according to this distance by the given visual angle.

I have stated all of these processes concerning vision so thoroughly in order to demonstrate clearly and irrefutably that [71] the *understanding* is predominantly active in apprehending any alteration as *effect* and referring it to its cause on the basis of the fundamental *a priori* intuitions of space and time, thereby bringing into existence the cerebral phenomenon of the objective world, in aid of which the senses provide only a few data. And indeed, the understanding completes this business only through its own form, which is the causal law, and therefore quite immediately and intuitively – without the assistance of reflection, i.e., of abstract knowledge by means of concepts and words, which are the material of *secondary* cognition, i.e., of *thought*, and so of *reason*.

That the cognition based on the understanding[a] is independent from reason and its assistance also explains why, if the understanding once posits an incorrect cause for given effects, and hence immediately intuits this cause, such that an *illusion*[b] arises, reason may still correctly recognize the true state of affairs in the abstract;[c] however, reason cannot come to the aid of understanding with this abstract knowledge; rather, regardless of the better knowledge, the illusion remains fixed. Double vision and double touch, as were explained above, are the same sort of illusion resulting from the removal of the sense organs from their normal positions. It is the same with a hundred similar cases in which the understanding is inaccessible to reason's teaching as the understanding presupposes causes which are usual and familiar to it, immediately intuiting these causes, even though reason has communicated the correct state of affairs by other means. This is so, as was mentioned above, in the moon's appearing greater on the horizon; but also in the image of a solid body appearing to float in the focal point of a concave mirror; in the painted relief we take for real; in the movement of a shore or bridge on which we are standing as a ship passes by; in the high mountains' appearing much closer than they are because of the paucity of atmospheric perspective resulting from the pure atmosphere in which their highest peaks lie. For in any of these correction is impossible, as in its cognition understanding is prior to reason and cannot be reached by reason, so that *illusion* (i.e. the deception of the understanding) remains, even if *error* (i.e. the deception of reason) can be prevented. That which is correctly cognized by *understanding* is *reality*; that which is correctly cognized by *reason*, [72] is *truth*, i.e., a judgement that has a ground. The opposite of the former is *illusion* (that which is falsely intuited); the opposite of the latter is *error* (that which is falsely thought).

Although the purely formal part of empirical intuition, thus the law of causality, as well as space and time, lies *a priori* in the intellect, the application of this law to empirical data is not given to the intellect at the same time; rather, it acquires these first through practice and experience. For this reason newborn children indeed experience impressions of light and colour, except they still do not apprehend objects and actually see; rather, for the first weeks, they are in a stupor, which disappears as soon as their understanding begins first by means of touch and sight to practice its function on the data of the senses, through which the objective world gradually enters their consciousness. This entry can clearly be recognized as their gaze becomes intelligent and their movements show some intentionality, especially when for the first time they acknowledge their caregiver by showing a friendly smile. One can also observe that children experiment with vision and touch for some time in order to perfect their apprehension of objects under different illumination, in different directions, and at different distances, and so they work at a quiet, but serious study until they have acquired all the understanding's operations of vision described above. However, this schooling is much more clearly verified through those born blind, but operated on later, since these people give accounts of their perceptions. Since *Cheselden*'s blind person became famous (about whom the original report is given in the *Philosophical Transactions*, Vol. 35) the case has often been repeated and each time it has been confirmed that these people who acquired the use of their eyes late in life indeed see light, colours, and figures immediately after the operation, but still have no objective intuition of objects, for their understanding must first learn to apply its causal law to the unfamiliar data and their alterations. When for the first time Cheselden's blind person glanced into his room with various objects in it, he distinguished nothing, but had only a total impression, of a totality consisting of a single piece: he took it to be a smooth, multi-coloured [73] surface. It did not occur to him to recognize separate things placed behind one another at various distances. For such blind persons, for whom sight has been restored, touch, to which things are already familiar, must first make these things familiar to sight, as if presenting and introducing these things. At the beginning they have absolutely no judgement about distance, but they grasp at everything. When one such blind person with restored sight saw his house from outside, he could not believe that all the big rooms could be in that little thing. Another was elated when, some weeks after the operation, he made the discovery that a copper engraving on the wall represented all sorts of objects. In the *Morgenblatt* of 23 October 1817,[a] there is a report of a person born blind who received sight in his seventeenth year of life. He had first to learn intelligent intuition,[b] for he did not recognize by sight any objects previously familiar to him by touch, and thus he took goats to be humans, etc. His sense of touch had first to make the sense of sight familiar with each individual object. Then he also had absolutely no judgement of the distance of objects he saw, but grasped for all of them. – *Franz*, in his book, *The eye: a treatise on the art of preserving this organ in healthy condition, and of improving the sight* (London: Churchill, 1839), says, pp. 34–6: ‘A definite idea of distance, as well as of form and size, is only obtained by sight and touch, and by reflecting on the impressions made on both senses; but for this purpose we must take into account the muscular motion and voluntary locomotion of the individual. – Caspar Hauser,[*] in a detailed account of his own experience in this respect states, that upon his first liberation from confinement, whenever he looked through the window upon external objects, such as the street, garden etc., it appeared to him as if there were a shutter quite close to his eye, and covered with confused colours of all kinds, in which he could recognize or distinguish nothing singly. He says farther, that he did not convince himself till after some time during his walks out of doors, that what had at first appeared to him as a shutter of various colours, as well as many other objects, were in reality very different things; [74] and that at length the shutter disappeared, and he saw and recognized all things in their just proportions. Persons born blind who obtain their sight by an operation in later years only, sometimes imagine that all objects touch their eyes, and lie so near to them that they are afraid of stumbling against them; sometimes they leap toward the moon, supposing that they can lay hold of it; at other times they run after the clouds moving along the sky, in order to catch them, or commit other such extravagancies…Since ideas are gained by reflection upon sensation, it is further necessary in all cases, in order that an accurate idea of objects may be formed from the sense of sight, that the powers of the mind should be unimpaired, and undisturbed in their exercise. A proof of this is afforded in the instance related by Haslam,[**] of a boy who had no defect of sight, but was weak in understanding, and who, in his seventh year was unable to estimate the distances of objects, especially as to height; he would extend his hand frequently towards a nail on the ceiling, or towards the moon, to catch it. It is therefore the judgement which corrects and makes clear this idea or perception of visible objects.'

The intellectual nature of intuition depicted here is corroborated physiologically by *Flourens*' *On Life and on Intelligence*[a] (second edition, Paris, Garnier Brothers, 1858). On p. 49, under the heading: 'difference between the tubercule and the cerebral lobe',[b] Flourens says: 'We must make a great distinction between the senses and the intelligence. The removal of a cerebral tubercule determines the loss of *sensation*, of the *sense* of sight; the retina becomes insensible; the iris becomes set. The removal of a cerebral lobe allows *sensation, sense, sensibility* of the retina and *mobility* of the iris to continue; it destroys simply *perception*. In the one case we are concerned with a *sensorial* fact, in the other with a *cerebral* fact; in the one case it is the loss of *sense*, in the other the loss of *perception*. The distinction between perceptions and sensations is nevertheless a great result, and its demonstration is obvious. There are two [75] means for causing loss of vision through the brain: 1) through tubercules, that is the loss of sense, of sensation; 2) through the lobes, that is the loss of perception, of intelligence. Accordingly, sensibility is not intelligence; thinking is not feeling; and thus an entire philosophy is upset. Therefore an idea is something other than a sensation, and here we have new proof of the radical error of this philosophy.'[c] Further, Flourens says, p. 77, under the heading: 'distinction between sensibility and perception':[d] 'One of my experiments proves that we must clearly distinguish between *sensibility* and *perception*. If we remove an animal's *actual brain* (the *lobes* or *cerebral hemispheres*), the animal loses its sight. But with regard to the eye, nothing has altered: objects continue to be projected on the retina; the *iris* retains is capacity to contract, and the *optic nerve* remains perfectly sensitive and responsive. And yet the animal no longer sees; there is no longer any *vision* although everything that is *sensation* continues to be present; there is no longer any *vision* because there is no longer any *perception*. Consequently *perceiving* and not *feeling* is the first element of the *intelligence*. *Perception* is part of *intelligence*, for it is lost along with *intelligence* and through the removal of the same organ, namely the *lobes* or *cerebral hemispheres*. *Sensibility* is not part of it at all, since it continues to exist after the loss of *intelligence* and the removal of the *lobes* or *hemispheres*.'[a,63]

That the intellectual nature of intuition was already generally realized by the ancients is indicated by the famous verse of the ancient philosopher Epicharmus: 'The mind sees and the mind hears; everything else is deaf and blind.'[b] Plutarch, who cites him (*On the intelligence of animals*, ch. 3[c]) adds: 'because sensation in the eye and the ear produces no sensory perception, if not accompanied by the understanding',[d] and shortly before this he says: 'The theory of Strato, the natural philosopher, proves that "it is completely impossible to perceive without understanding."'[e] Shortly thereafter, he says again: 'Therefore all beings that perceive must also have [76] understanding, since only through understanding are we able to perceive.'[f] Another verse of the same Epicharmus, which Diogenes Laertius (III, 16) quotes, may be relevant here:

Eumaeus, wisdom is not for us alone,
But every living being also has understanding.[g]

Porphyry also (*On abstinence* III, 21[a]) attempted to demonstrate in detail that all animals have understanding.

That this is so follows necessarily from the intellectual nature of intuition. All animals, down to the lowest, must have understanding, i.e., cognition of the causal law, if only in very different degrees of acuity[b] and clarity, but always at least as much as is required for intuition with their senses, for sensation without understanding would not only be useless, but a cruel gift of nature. No one, except those without understanding, will doubt that higher animals have understanding. But it is also at times undeniably evident that their cognition of causality has actually originated *a priori* and not merely from habit of seeing one thing follow from another. A very young dog does not leap down from a table because he anticipates the effect. A short while ago, I had installed in my bedroom large curtains, reaching to the ground, of the sort that part in the middle when one draws the cord. In the morning upon arising, as I drew these for the first time, I noticed to my surprise that my very intelligent poodle[c] stood there quite astounded, and looked around, upwards and sideways, for the cause of the phenomenon; thus he sought the alteration that he knew *a priori* must have preceded it. The same occurred on the next morning. – But even the lowliest of animals, the water polyp, lacking separate sense organs, has perception and, consequently, understanding, when, to reach brighter light, it clings with its arms to its water plant as it wanders from leaf to leaf.

And we distinguish human understanding[d] (which we nonetheless clearly separate from reason[e]) from this lowest understanding only by degree, while all the intermediate levels of the ranks [77] of animals are full, the highest members of which, the ape, elephant, and dog, astound us with their understanding. But the work of the understanding always consists in the immediate apprehension of causal relations, first, as was indicated, between one's own body and other bodies, from which objective intuition proceeds; and next among these objectively intuited bodies, where now, as was seen in the previous section, causal relations occur in three different forms: namely as cause, as stimulus, and as motive, according to which three forms all movement in the world proceeds and which are understood only by the understanding.[f] Now if, of these three, it is *causes* in the narrowest sense that the understanding investigates, then it creates mechanics, astronomy, physics, chemistry, and invents machines for its prosperity or ruin. However, an immediate, intuitive apprehension of causal connections ultimately lies at the basis of all its discoveries. For this is the sole form and function of the understanding; in no way, however, is it the complicated clockwork of the twelve Kantian categories, the invalidity of which I have proven. – All understanding[a] is an immediate and, therefore, intuitive apprehension of causal connection, although to be fixed it must at once be set down in abstract concepts. Thus calculating is not understanding and in and of itself provides no comprehension[b] of things. This comprehension is achieved only by means of intuition, through correct cognition of causality and *geometric* construction of the course of events. *Euler* has presented this better than anyone else because he understood the matter from the ground up. In contrast, calculation concerns nothing but abstract concepts of quantities, and it establishes the mutual relations among these. We never achieve the least understanding of a physical process by this means. For such understanding requires *intuitive* apprehension of spatial relations by means of which the causes operate. Calculation determines how much and how large, and is, therefore, indispensable to praxis. It can even be said, *where calculation begins, understanding ceases*: for the head busied with numbers, while it calculates, is completely estranged from the causal connection and the geometrical construction of the physical course of events: it is stuck in nothing but abstract, numerical concepts. The result, however, indicates nothing more than [78] *how much*, never *what*. *L'expérience et le calcul*, that motto[c] of French physicists, is by no means sufficient. – Whereas, if *stimuli* are the understanding's guide, then it will produce plant and animal physiology, therapy, and toxicology. Finally, if it has applied itself to *motivation*,[d] then it will either simply use this theoretically as a guide in order to promote morals, theory of right, history, politics, and even dramatic and epic poetry, or instead use it practically, either to train animals or even to make the human race dance to its tune once it has happily discovered which string to pull to make each puppet move at its pleasure. But whether the understanding, by way of mechanics, uses the weight of bodies to make machines so cleverly that their working occurs at just the right time to serve its purpose, or whether for its own ends it puts into play the collective or individual inclinations of humans, it is all the same as regards the function at work here. Now in this practical application, the understanding is called ingenuity;[a] and if this is accompanied by deception, guile;[b] and when its ends are quite trivial, wiliness;[c] and when it is in connection with the detriment of others, unscrupulousness.[d] Whereas in merely theoretical use it is simply called *understanding*; however, in its higher degrees, it is then called acumen, insight, sagacity, penetration; in contrast, a lack of it is called dullness, stupidity, idiocy, etc. These extremely different degrees of the understanding's acuteness are innate and not to be acquired, although practice and knowledge of the subject matter are generally required for its correct use, as we have seen even in its first application, empirical intuition. Any simpleton has reason: if he is given the premises, then he will draw the conclusion. But understanding requires *primary* cognition, consequently intuitive cognition, and therein lies the distinction. Accordingly, the core of any great discovery, as well as that of any plan of worldwide historical significance, is the product of a fortuitous moment, in which, through favourable internal and external circumstances, a complicated causal series, or hidden causes of phenomena seen a thousand times, or an obscure path never before taken, is suddenly illuminated for the understanding. –

Through [79] the above discussions of the processes of touch and vision it is indisputably established that empirical intuition is in its essentials the work of the *understanding*, and that on the whole the senses provide it with scant material, in their sensations; so that the *understanding* is the artist forming the work, the *senses* only the assistants that present the material. But the understanding's procedure consists throughout in the transition from given effects to their causes, which are first presented as objects in space through just this procedure. The prerequisite for this is the law of causality, which for just this reason must be aided by the understanding itself, because it could never have come to it from the outside. Indeed, the law of causality is the first condition of all empirical intuition, but this is the form in which all experience occurs: how then could the law first be derived from experience, for which it is the essential prerequisite? – Precisely because this absolutely cannot be, and because *Locke's* philosophy had all but abolished all apriority, *Hume* denied the entire reality of the concept of causality. In view of this, he already mentioned (in the 7th of his *Essays on*

Human Understanding[e]) two false hypotheses, which have been advanced again in our time: one is that the effect of will on a member of the body is the origin and prototype of the concept of causality; the other is that the resistance with which bodies oppose our pressure against them is the origin and prototype of the concept of causality. Hume refutes both with his custom and his association. But I do so in this way: there is absolutely no causal connection between the act of will and the action of the body; rather, both are immediately one and the same, which is doubly perceived, once in self-consciousness, or the inner sense, as an act of will,[a] and at the same time in the external, spatial intuition of the mind, as action of the body. (See *The World as Will and Representation*, 3rd edn, Vol. II, p. 41.[b]) The second hypothesis is false, first because, as was shown above in detail, a mere sensation of touch provides absolutely no objective intuition, much less the concept of causality (this concept can never arise from the mere feeling of an impeded effort of the body, which indeed often occurs without external cause); and second because our pressing against an external object must have a motive [80] and already presupposes the perception of the object, but this presupposes the cognition of causality. – The independence of the concept of causality from all experience can be thoroughly demonstrated by the fact that it has been proven that the possibility of all experience depends on this concept, as I have shown above. In § 23 I will demonstrate that *Kant's* proof, advanced with the same intent, is wrong.

This is also the place to note that Kant either did not realize or, because it did not suit his purpose, intentionally evaded the way the causal law, known to us prior to all experience, brings about empirical intuition. In *Critique of Pure Reason* the relation of causality to intuition is not mentioned in the ‘Doctrine of elements’, but in a place where it would not be expected, namely in the chapter ‘The paralogisms of pure reason’, and, in fact, in the ‘Criticism of the fourth paralogism of transcendental psychology’, only in the first edition, pp. 367ff.[c] That he assigns the discussion to this place already shows that, in considering this relation, he always had in mind only the transition from appearance to the thing in itself, but not the source of intuition itself. Accordingly, he says here that the existence of an actual object external to us is not given directly in perception, but rather can be thought of as an external cause of the perception and so can be inferred. But whoever does this, is for Kant a transcendental realist, and hence, headed the wrong way. Certainly Kant here understands by ‘external object’ the thing in itself. In contrast, the transcendental idealist stops at the perception of what is empirically real, i.e., of what exists in space external to us, without first having to infer the cause in order to give it reality. *Perception*, for Kant, is something completely immediate, something that occurs without any assistance from the causal nexus or, therefore, from the understanding: he identifies perception directly with sensation. This is proven in a passage from the same source, p. 371: ‘I am no more necessitated to draw inferences in respect of the reality of external objects’, etc., and also this on p. 372,[a] ‘Now one [81] can indeed admit that’, etc. From these passages it is completely clear that for him *perception* of external things in space precedes all application of the causal law, and thus this law does not enter into perception as an element and condition: for him mere sensation is immediately perception. Only insofar as one enquires about what may be *external* to us, as understood in the *transcendental* sense, in other words about the thing in itself, is causality mentioned in connection with perception. Kant further takes the causal law as existing and possible only in reflection, thus in abstract, distinct conceptual knowledge,[b] but he has no idea that the application of the causal law *precedes all reflection*, which is obviously the case, particularly with empirical sensory intuition, which otherwise never could take place, as my analysis of this above has irrefutably proven. Thus Kant must leave completely unexplained the origin of empirical intuition: for him it is as if given by a miracle, merely a matter of the senses, coinciding with sensation. I do wish that the thoughtful reader would attend to the passages cited in Kant so that it will be evident to him how much more accurate is my conception of the whole sequence and process. This extremely erroneous Kantian view has ever since prevailed in philosophical literature because no one was so bold as to question it, and I have needed first to clear the way, in order to cast light on the mechanism of our cognition.

Moreover, the fundamental idealistic insight advanced by Kant has lost absolutely nothing through my correction of the matter; indeed, with me it has gained all the more insofar as the requirement of the causal law is absorbed into empirical intuition, as its product, and is extinguished, so that it cannot legitimately be used any further for the purpose of a wholly transcendent question about the thing in itself. That is, if we reflect on my theory of empirical intuition, as given above, we will find that the first datum of intuition, the sensation, is a completely subjective process internal to the organism because it is beneath the skin. Locke has already thoroughly and fundamentally proven [82] that these sensations of the sense organs, even assuming that they are incited[c] by external causes, still can have absolutely no similarity to the property[d] of these causes – the sweetness lies not in the sugar, the red lies not in the rose. But even that they must have an external cause at all depends on a law, the origin of which demonstrably lies in us, lies in our brain, and hence is ultimately no less subjective than sensation itself. Indeed, both *time* (the first condition for the possibility of any *alteration*, and thus the occasion on which an application of the causal law can first occur) and *space* (which first makes possible the externalization[a] of a cause, and which thereby presents itself as object) are subjective forms of the intellect, as Kant certainly proved. Accordingly we find all the elements of empirical intuition lying within us, and nothing is contained in them which would give reliable reference to anything absolutely different from us, a thing in itself. – But there is more: under the concept of *matter* we think of that which still remains of a body when we strip it of its form and all of its specific qualities, that which, for just this reason, must be one and the same in all bodies. Now, however, those forms and qualities that we have eliminated are nothing other than the particular and specially determined *way of acting*[b] of bodies, which constitutes their difference as such. Therefore, if we disregard the forms and qualities of objects, then what remains is only *activity in general*,[c] pure acting[d] as such, causality itself (considered objectively) – that is, what remains is only the reflection of our own understanding, the image of its only function projected outward, and matter is pure causality through and through: its being is its acting in general.[e] (Cf. *The World as Will and Representation*, Vol. 1, § 4, p. 9; and Vol. 2, pp. 48–9.[f]) Therefore, pure matter cannot be intuited, but only thought: it is something thinking adds to any reality as its basis, since pure causality (mere acting without a determined way of acting) cannot be given intuitively and thus cannot be found in experience. – Hence matter is only the objective correlate of pure understanding; it is really causality [83] and nothing else, just as this is the immediate cognition of cause and effect in general and nothing else. Now for just this reason, the law of causality can have no application to matter itself: i.e. matter can neither arise nor perish, but it is and persists. For since all change[g] of accidents (forms and qualities), i.e., all things arising and perishing, occurs only by means of causality, but matter itself is pure causality as such, objectively comprehended, matter cannot exercise its power over itself, just as the eye can see everything, but just not itself. Furthermore, since ‘substance’ is identical with matter, it can be said that *substance* is *acting* comprehended abstractly;[a] *accident* is the particular way of acting,[b] acting concretely.[c] – Thus these are now the results to which true idealism, i.e. transcendental idealism, leads. Through my principal work, I have shown that by the path of representation we cannot arrive at a thing in itself, i.e., at that which also exists altogether outside of representation, but we must strike a course leading through the heart of things, a course that at once breaches the fortress, as if by treachery.

However, if one wants to compare, or even completely identify the honest and quite profound analysis of empirical intuition given here in its elements, which show themselves to be altogether subjective, with *Fichte's* algebraic equation between I and Not-I, with his sophistic sham-demonstrations, which required a mask of unintelligibility, even of nonsense, in order to deceive the reader with such explanations as the I spins the Not-I out of itself – in short, with all the foolishness of the science of nulledge,[d] then this would be patent chicanery and nothing else. I protest against all association with this *Fichte*, just as Kant publicly and expressly protested against the same in an *ad hoc* notice in the *Jena Literary Journal*[e] (Kant: ‘Declaration concerning Fichte's Science of Knowledge’, in *Advertisements of the Jena Literary Journal*,[f] 1799, No. 109). If Hegelians or similar ignoramuses still prefer to speak of a Kantian–Fichtean philosophy, there is Kantian philosophy and Fichtean wind-baggery – this is the true state of affairs, and it will [84] remain so, despite all those who acclaim the bad and disdain the good, who are more numerous in the German fatherland than anywhere else.

§ 22 On the immediate object[64]

The sensations of the body, then, provide the data for the initial application of the causal law and are precisely the means through which intuition of this class of objects arises. Consequently this class of objects gets its being and existence only by means of, and through the exercise of, this function of the understanding as it comes into operation.

Now insofar as the organic body is the starting point for the intuition of all other objects and thus is the mediation[g] of these, in the first edition of this essay I had called the body the *immediate object*. This expression, however, can only apply in a quite non-literal sense. For although perception of its sensations is absolutely immediate, it does not present itself as an object at all, but so far everything still remains subjective, that is, sensation. From this, intuition of all other objects as causes of such sensations certainly emanates, whereupon these causes present themselves as objects, but not, the body itself, for in this process the body provides mere sensation to consciousness. The body is objectively cognized (that is, as an object) only *mediately*, because it, like all other objects, presents itself in the understanding, or in the brain (which is the same), as a cognized cause of a subjectively given effect. In precisely this way it presents itself as *objective*, which can happen only when its parts act on its own senses, that is, when the eye sees the body, the hand touches it, etc., and on the basis of such data the brain, or the understanding, constructs the body, as it does other objects, in space, according to its form and quality. – Accordingly the immediate presence in the consciousness of representations belonging to this class depends on the position which they take in the chain of causes and effects connecting everything to what is then the body of the all-cognizing subject.[a]

[85] § 23 Disputation of the proof of the apriority of the concept of causality advanced by kant[65]

A principal object of the *Critique of Pure Reason* is a demonstration that the law of causality is universally valid for all experience, is *a priori*, and, following from this, is restricted to the possibility of experience. However, I cannot agree with the proof of the apriority of the principle given there. In essence, it is the following:[66] ‘the necessary synthesis of the manifold of all empirical cognition through the imagination creates a succession, but still not a determinate succession, i.e., the succession leaves indeterminate which of two perceived states comes first, not only in my imagination, but in the object. However, a definite order of this succession, through which alone what is perceived becomes experience (i.e. is justified as objectively valid judgements) first occurs through the pure concept of the understanding of cause and effect. Thus the principle of causal relation is a condition for the possibility of experience and as such is given to us *a priori*.' (See *Critique of Pure Reason*, 1st edn, p. 201; 5th edn, p. 246.[a])

According to this, the order of succession of alterations of real objects should first be recognized as something objective through the causal nature[b] of these alterations.[67] Kant repeats and explains this assertion in the *Critique of Pure Reason*, especially in his 'Second Analogy of Experience' (1st edn, p. 189; more completely in the 5th edn, p. 232[c]), then at the conclusion of his 'Third Analogy', a passage which I ask anyone who wants to understand the following to read again. Throughout this he asserts that the *objectivity of the succession of representations*, which he explains as their conformity with the succession of real objects, is simply cognized through the rule by which they follow one another, i.e., through the law of causality. He thus asserts that through my mere perception, the objective relation of appearances following one another remains completely indeterminate, since I then perceive merely the sequence[d] of my representations. But if my judgement is not supported by [86] the law of causality, the sequence in my apprehension[e] does not justify any judgement about the objective sequence. Moreover, in my apprehension, I can allow the succession of all my perceptions to proceed in reverse order, since there is nothing that apprehension determines as objective. To clarify this assertion Kant cites the example of a house, the parts of which he can observe in any succession he prefers, e.g., from top to bottom or from bottom to top, such that the determination of the succession would be merely subjective and not grounded in any object because it depends on his choice. And as a contrast, he cites the perception of a ship sailing down a river, which he first perceives upstream and in succession gradually downstream, in which case he cannot change his perception of the succession of the ship's positions. Therefore he derives the subjective sequence of his apprehension from the objective sequence in appearance, which for this reason he calls an *event*. Against this, I assert *that the two cases are not at all different, that both are events*, the cognition of which is objective, i.e., a cognition of alterations of real objects, which are recognized as such by the subject. *Both are alterations of the position of two bodies relative to one another*. In the first case, one of these bodies[f] is the observer's own body,[g] and indeed, only a part of the same, namely the eye, and the other is the house, relative to the parts of which the eye is successively altered. In the second case, the ship alters its position relative to the river; thus, the alteration is between two bodies.[h] Both are events: the only difference is that in the first case the alteration proceeds from the observer's own body, the sensations of which are indeed the starting point of all of the observer's perceptions. The body, however, is nevertheless an object among objects, and thus is subjected to the laws of this objective, physical world.[a] Insofar as the observer behaves as a purely cognizing being, the movement of his body according to his will is for him merely an empirically perceived fact.[68] The order of succession of alterations could be reversed in the second case, just as it could in the first, so long as the observer had the power to pull the ship upstream, just as in the first case he has the power to move his eye in the opposite direction. For from the fact that the succession of [87] perceptions of the parts of the house depends on his choice, Kant wants to conclude that the succession itself is not objective and is not an event. But the movement of his eye in the direction from the roof to the cellar is an event, and the opposite, from cellar to roof, is a second event, just as the ship's course is an event. In this there is absolutely no difference, just as there is no difference whether I pass by a line of soldiers or they pass by me: both are events. If from the shore I stare at a ship passing nearby, then it will soon appear that the shore moves with me and the ship stands still. Now in this I am mistaken only in the cause of the relative alteration of place, since I ascribe the movement to the wrong object, but I nonetheless objectively and correctly cognize the real succession of the positions of my body relative to the ship.[69] In the case he cites, Kant would also not have believed he found a difference if he had considered that his body is an object among objects and that the succession of its empirical intuitions depends on the succession of the influences of other objects on his body. Consequently, this succession is something objective, i.e., it takes its place among objects *immediately* (if not also mediated), independent of the subject's choice, and consequently it can be readily cognized even if the objects successively influencing his body do not stand in a causal relation to one another.

Kant says time cannot be perceived; thus, no succession of representations can be empirically perceived as objective; i.e. as alterations of appearances distinguished from alterations of merely subjective representations. The objectivity of alterations can be cognized only through the law of causality, which is a rule according to which states follow one another. And the result of his assertions would be that we perceive absolutely no sequence in time as objective, excepting that of cause and effect, and that any other sequence of appearances perceived by us is determined thus and not otherwise merely through our choice. Against all of this I must assert that appearances can certainly *follow one another* without *following from one another*. [88] And this in no way undermines the law of causality. For it remains certain that any alteration is an effect of another, since this is established *a priori*, except that an alteration does not merely follow the one which is its cause, but all others which are simultaneous with that cause and with which it stands in no causal connection. It is not perceived by me in the sequence of the series of causes, but in a completely different sequence, which, however, is for this reason no less objective and is very different from a subjective one, one which is dependent on my choice, one which, e.g., is similar to my mental images.[a] Events that follow one another in time, but do not stand in causal connection, are just what is called *Zufall*, a word that derives from *Zusammentreffen* and *Zusammenfallen*, something unconnected just as τὸ συμβεβηκός comes from συμβαίνειν[b] (cf. Aristotle, *Posterior Analytics* I, 4[c]).[70] If I step out of the door of my house and then a tile falls from the roof, striking me, there is no causal connection between the tile's falling and my exiting, but nonetheless there is a succession – that my exiting precedes the tile's falling is objectively determined in my apprehension and not subjectively determined through my choice, which otherwise would likely have reversed the succession. In just the same way, the succession of sounds in music is objectively determined and is not determined subjectively by me, the listener. But who would say that the sounds of the music follow one another according to the law of cause and effect? Indeed, even the succession of day and night is without a doubt recognized by us as objective, but certainly they are not understood to be cause and effect of one another, and before Copernicus, the world was in error concerning their common cause, and the correct knowledge[d] of their succession had not thereby been affected. Incidentally, Hume's hypothesis is refuted by this, since the sequence of day and night, most ancient and without exception, has not by custom misled anyone into taking them for cause and effect.[71]

Kant says in the same passage[72] that a representation shows objective reality (meaning that it is quite distinct from mere mental images) only through our recognizing its necessary connection with other [89] representations, that is subject to a rule (the causal law), and its place in a determinate order of the temporal relation of our representations. But of how few representations do we recognize[a] the place that the causal law gives them in the series of causes and effects! and yet we always know how[b] to distinguish the objective from the subjective, real objects from mental images. In sleep, in which the brain is isolated from the peripheral nervous system and, hence, from external impressions, we cannot make that distinction; therefore, while we dream we take mental images for real objects and only on waking (i.e. when the sensory nerves[c] and, thereby, the external world re-enter consciousness) do we recognize the error, although the law of causality asserts its authority in a dream as well so long as the dream is not interrupted, albeit with an impossible content often foisted upon it.[d] One would almost believe that Kant was under Leibniz's influence in the passage cited above, no matter how much in his entire philosophy Kant was otherwise opposed to Leibniz, especially if one notices that quite similar remarks are found in Leibniz's *New Essays Concerning Human Understanding*[e] (Book IV, ch. 2, § 14), e.g., 'the truth of sensible things consists only in the connection of phenomena, which must have its reason, and this is what distinguishes them from dreams…the true criterion, where objects of the senses are concerned, is the connection of phenomena, which guarantees the factual truths with regard to sensible things outside us'.[f,73]

With this whole proof of the apriority and necessity of the causal law as the sole means by which we could recognize the objective succession of alterations (insofar as the causal law is a condition of experience), Kant has obviously made a most amazing and palpable error, one which is only explicable as a consequence[g] of his preoccupation with the a *priori* part of our cognition, a preoccupation which led him to lose sight of what otherwise anyone would have seen. In § 21 I have provided the only correct proof of the apriority of the causal law. This is confirmed in every moment by the unshakeable certainty with which everyone expects that the causal law would apply in any case of experience, i.e., by the certainty that we attribute [90] to this law, distinguished from every other certainty grounded on induction, e.g. the empirically known laws of nature. It is even impossible for us to think that somewhere in the world of experience this law might be subject to an exception. E.g. we could *imagine*[a] that the law of gravity might cease to operate at some time, but not that this could occur without a cause.[74]

In his proof,[75] Kant errs in a way opposite to Hume. For Hume explained all consequences[b] as mere sequences;[c] in contrast, Kant wants there to be no other sequences, but consequence. Certainly only the pure understanding can conceive of *consequence*, but it can no more conceive of mere *sequence* than it can conceive of the distinction between right and left, which, like sequence, is to be grasped only through pure sensibility. The sequence[d] of events in time can certainly be recognized empirically (which Kant denies in the same passage), as can the juxtaposition of things in space. But the *way in which* something generally *follows*[e] another in time is no more to be explained than the way in which something *follows from*[f] another: the former cognition is given and conditioned by pure sensibility; the latter is given and conditioned by pure understanding. However, as he explains the objective sequence of appearance as merely cognizable through the chain of causality, Kant slips back into the same mistake for which he reproaches *Leibniz*, 'that he intellectualizes the forms of sensibility' (*Critique of Pure Reason*, 1st edn, p. 275; 5th edn, p. 331[g]). – My view on succession[h] is the following. We derive the knowledge[i] of the mere *possibility* of succession from the form of time belonging to pure sensibility. The succession of real objects, the form of which is precisely time, we cognize empirically and consequently as *real*.[j] However, through the understanding, by means of causality, we cognize merely the *necessity* of a succession of two states, i.e., an alteration, and that we have the concept of the necessity of succession is in itself a proof that the law of causality is not known empirically, but is a law given to us *a priori*. After all, the principle of sufficient reason is the expression of a necessary connection among all of our objects, [91] i.e., representations; it is the expression of the fundamental form[k] lying at the core of our cognitive faculty; it is the universal form of all representations and the sole origin of the concept of *necessity*, that concept which, of course, has no true content, nor verification other than that of the appearance of the consequent when its ground is given.[76] In the class of representations that we are now considering, where this principle appears as the law of causality, this law determines the temporal sequence, which stems from the fact that time is the form of these representations, and that is why the necessary connection here appears as the rule of succession. In other forms of the principle of sufficient reason the necessary connection that it everywhere demands will appear to us in forms quite different from time, and as a result, will not appear as succession. Yet the principle of sufficient reason will always retain the character of a necessary connection, by which the identity of this principle reveals itself in all of its forms – or, rather, this principle reveals the unity of the root of all laws.

If Kant's assertion, which I challenged, were correct, then we would only recognize the *reality* of succession from its *necessity*; however, this presupposes an understanding which simultaneously comprehends all series of causes of effects, hence, an omniscient understanding. Kant has imposed the impossible on the understanding, merely in order to have less need of sensibility.

How can Kant's assertion that the objectivity of succession is known only because effect necessarily follows cause be reconciled with his other assertion (*Critique of Pure Reason*, 1st edn, p. 203; 5th edn, p. 249[a]) that the empirical criterion for which of two states is the cause and which is the effect is mere succession? Who cannot see here the most obvious circle?

If the objectivity of succession were recognized only from causality, then it would be conceivable only as such and would be nothing more than this. For if it were still something else, then it would have other distinguishing marks[b] by which it could be recognized, which Kant precisely denies. Consequently, if Kant were correct, one could not say: ‘this state is the effect of that, therefore it follows it.’ Rather, following[c] and being an effect[d] would be one and the same, and that proposition would be tautological. If the distinction between sequence and consequence were abolished, Hume would again [92] be correct, as he explained all consequence as mere sequence, or, in any case, denied the distinction.

Kant's proof[77] would thus be reduced to our recognizing empirically only the *reality*[e] of succession. But since we also recognize the *necessity* of succession in certain series of events, and since we even know prior to all experience that every possible event must have a definite place in one or another of these series, there already follow from this both the reality[f] and the apriority of the law of causality, and for the latter the proof given in § 21 above is the only correct one.[78]

From Kant's theory that objective succession is possible and recognizable only through causal connection, another parallel follows: namely, that simultaneity is possible and recognizable only through reciprocal action,[a] as set forth in the *Critique of Pure Reason* under the heading, 'Third Analogy of Experience'.[b] Here Kant goes so far as to say 'that the simultaneity of appearances, which do not operate on one another reciprocally, but would be somewhat separated by empty space, would not be an object of possible perception'[c] (this would be an *a priori* proof that there is no empty space between the fixed stars); and 'that the light that *plays between* our eyes and the heavenly bodies' (which expression slips in the idea that the light of the stars not only works on our eyes, but also that of our eyes works on the stars) 'effects a community between us and the latter and thereby proves the simultaneity of the latter'.[d] This last statement is even empirically false since the sight of a fixed star in no way proves that it is simultaneous with the spectator, but at most proves that it existed a few years ago, and in some cases, thousands of years ago. As to the rest, this Kantian theory stands or falls with the first, only it is much easier to see through. In addition, above in § 20, I have already discussed the vacuousness of the concept of reciprocal action.

If one wishes, one may compare this refutation of the Kantian proof in question here to two previous attacks, namely, that by *Feder* in his book *On Space and Causality* § 29[e] and that of *G. E. Schulze* in his *Critique of Theoretical Philosophy*, Vol. 2, pp. 422ff.[f]

It [93] is not without great reluctance that I dared (1813) to produce objections to a prominent theory that was taken as proven and even repeated in the most recent books (e.g. Fries, *Critique of Reason*, Vol. 2, p. 85[g]) – a theory of that man whose amazing profundity I respect and to whom I owe so much that is so important, that his spirit can say to me in Homer's words:

‘I also removed the fog that covered your eyes’.[h]

§ 24 On the misapplication of the law of causality[79]

According to our previous discussion, it is a misapplication of the law of causality whenever it is applied to something other than *alterations* in the empirically given material world, e.g., to natural forces, by means of which such alterations are first possible at all; or to matter, *in* which they take place; or to the universe, to which must be attributed an absolutely objective existence, not one conditioned by our intellect; and also in many other ways. Here I refer to what was said about this in *The World as Will and Representation*, Vol. 2, ch. 4, pp. 42ff. (3rd edn, II, pp. 46ff.).[a] Of course, the origin of such misapplication is partly in our applying the concept of cause, like countless other concepts in metaphysics and morals, much *too widely*, and partly through our forgetting that the law of causality is, indeed, a presupposition that we bring with us into the world and that makes possible intuition of things external to us. However, for just this reason, we are not justified in applying such a principle to the eternal order of the world and to all that exists in it external to and independent of the function[b] of our cognitive faculty from which this principle has arisen.

§ 25 The time of an alteration[80]

Since the principle of sufficient reason of becoming is applicable only to *alterations*, it must be noted here that ancient philosophers already posed [94] the question of the time in which an alteration takes place. For, it cannot take place while the earlier state still exists, and also not after the new state has already appeared; however, if we allow the alteration its own time between the two states, then during this time, a body must be in neither the first nor the second state, e.g., a dying person must neither be dead nor living, a body neither at rest nor in motion – which would be absurd. The niceties and subtleties on this question are found compiled in *Sextus Empiricus*, *Against the Mathematicians*,[c] Book IX, 267–271 and hypothesis III, ch. 14, and some of this is found in *Gellius*, Book VI, ch. 13. – Plato had rather cavalierly[d] dismissed this difficult point in the *Parmenides* (p. 138, Bip. edn[e]), merely asserting that the alteration occurs *suddenly* and fills *no time at all*. It is ἐξαίφνης (*in repentino*[a]) which he calls ἄτοπος φύσις ἐν χρόνῳ οὐδὲν [οὐδενὶ] οὖσα, that is, a thing of odd nature, being in no way in time (which then still occurs in time).

Consequently, it was left to *Aristotle*'s perspicacity to clear up this difficult matter, which task he accomplished thoroughly and in detail in the 6th book of the *Physics*, chs. 1–8. His proof that no alteration occurs suddenly (the ἐξαίφνης of Plato), but that every alteration occurs gradually, and hence occupies a certain time, is provided entirely on the basis of pure *a priori* intuition of time and space, but also turns out to be very subtle. In any case, the essentials of this very lengthy demonstration can be reduced to the following propositions. To be contiguous[b] means that things have in common their most extreme opposite limits; consequently, only two extended[c] things can be contiguous with one another, not two indivisible things (since they would then be one); consequently, only lines can border on one another, not mere points. This is transferred from space to time. As there is always a line between two points, so there is always a time between two nows.[d] This is the time of an alteration, if there is *one* state in the first now and another state in the second. The time of an alteration is, as is any time, infinitely divisible; consequently, in it, that which is altering goes through an infinite number of stages through which the second state gradually emerges out of the *first* state. – Here is how the matter can be explained in a way that is easy to understand: between two successive states, the difference between which we can grasp our senses, there lie infinitely more [95] states, the differences between which are imperceptible because the state which newly appears must have arrived at a certain stage or size in order to be perceptible to the senses. Thus the course of subtle[e] stages, or ever so slight extensions,[f] leads to the new state, as the new state gradually emerges. Considered collectively, these are included under the term alteration, and the time that they take up is the time of alteration. If we apply this to a body that is struck, then the most immediate effect is a certain oscillation of its inner parts, and after the impulse has been transmitted through them, the body breaks into external motion. – Aristotle quite correctly infers from the infinite divisibility of time that everything that fills time (hence also every alteration, i.e., transition from one state to another) must in every case be infinitely divisible, so that everything that arises, in fact comes together from infinite parts, and hence is always gradual and never sudden. In the last chapter of his book, from the principles given above and from the gradual arising of every motion which results from them, Aristotle draws the important conclusion that nothing indivisible, and so, no mere *point*, can move. *Kant's* definition of matter agrees with this quite well: matter is ‘that which moves in space’.

Thus this law of the continuity and graduality of all alterations, first set forth and proved by Aristotle, we find stated by *Kant* three times, namely in his *Dissertation on the sensible and intelligible forms of the world* [a] § 14; in the *Critique of Pure Reason* 1st edn, p. 207 and 5th edn, p. 253;[b] and finally in the *Metaphysical Foundations of Natural Science* at the close of ‘General Observations on Mechanics’. In all three passages, his presentation of the subject is brief, but also not as thorough as that of Aristotle, with whom, nonetheless, Kant's presentation is in complete agreement in its essentials. Therefore, doubtless Kant took up these ideas directly or indirectly from Aristotle, although Kant never names Aristotle. Aristotle's proposition, ‘nows are not contiguous’[c] is repeated in the form ‘there is always a time between two moments’, to which expression it may be objected that ‘even between two centuries there is none because in time, as [96] in space, there must be a clear boundary’. – So in the first and oldest of the presentations cited, instead of mentioning Aristotle, Kant wants this doctrine that he advanced identified with *Leibniz's* law of continuity.[d] If the two were really the same, then Leibniz would have gotten the matter from Aristotle. Now Leibniz first advanced this law of continuity[e] in a letter to Bayle (*ibid.*, p. 104), in which, however, he calls it ‘the general principle of order’[f] (following his own expression, p. 189 of his *Philosophical Works*,[g] ed. Erdmann) and for this term he gives a very general and vague, primarily geometric rationale, which has no direct bearing on the time of alteration, which he never even mentions.

[a] *Anregung*

[b] *Empfindung*

c *sensitiven*

d *aufhebt*

e *wahrnehmbar*

f *Zugleichseyn*

g *Beharrliches*

h *Dauer*

a *Wechsel*

b *nach einander*

c *neben einander*

d *Succession*

e *Gesammtvorstellung*

***** Cf. *Critique of Pure Reason*, [The Transcendental] Doctrine of Elements, Sect. II, ‘Conclusions from these concepts’, b and c; p. 33 in the first edition; p. 49 in the fifth [A33/B49]

a *unterworfen*

b *intuitives*

c *Gesammtvorstellung*

a *Phantasie*

b *Vereinzelung*

c κατ᾽ ἐξοχήν

d [A369 and A375]

e [A383]

f *Vorgestelltwerden*

a κατ᾽ ἐντελέχειαν

b κατὰ δύναμιν

c *Beziehung*

d *eines Seyns an sich der Objekte*

e *harmonia praestabilita*

f *monades*

g *Objectseyn…eines Objects*

h *Subjektseyn…des Subjekts*

a *erfahrungsmäßigen Realität*

b *regelmäßig*

c *Erfolgen*

d *in infinitum*

e *Bestimmungen*

a κατ᾽ ἐξοχήν

b *zufällige Zeitbestimmungen*

c *Zeitfolge*

d κατ᾽ ἐξοχήν

e *erforderlichen*

f *allgemeine*

g *Momente*

h [Hübscher *SW* 3, 46ff.]

a *causa est principium, a quo existentia, sive actualitas, entis alterius dependet* [*Ontologia*, Section 881]

b *Entstehn*

c *Ins-Daseyn-treten*

a *Geist*

b *Vernunftkritik*

c *causa prima*

d *causa sui*

e *contradictio in adjecto*

f [‘Reverends’ and ‘the first cause’ are Schopenhauer's English]

a *Rencontre*

b *Begriffe*

c *sekundiren*

a *anschaut*

b *vernimmt*

c *ahndet*

d [Francis Bacon *de Dignitate et Augmentis Scientiarum Libri* IX (*Nine Books of the Dignity and Advancement of Learning*), 1623 Book VI, chap. 4]

e *causa prima*

a [A620/B648-A630/B658]

b *ex professo*

c [Ak. 5: 400–410]

d [Hübscher *SW* 4, 37ff. and 56ff. See pp. 335ff. and 370ff. below]

e [*WWR* 2 (Hübscher *SW* 3), 44ff.]

a *Wechselwirkung* [The term has been translated as ‘reciprocity of action’ or ‘interaction’]

b *nichtig*

c [*WWR* 1, 487–91 (Hübscher *SW* 2, 544–9)]

d *Sempiternität*

a *Thatbestand*

b *Erkenntniß*

c *allgemeinste*

d *Allgemeinheit*

e *Urstoff*

a *Ursprung*

b [*WWR* 1, 518–21 (Hübscher *SW* 2, 580–3)]

c *Wesen*

d *die Fähigkeit zu wirken*

e *bloß zur Lehn haben*

f *Wechsel*

g [*WWR* 1, 160–1 (Hübscher *SW* 2, 160–1)]

a *chemische Grund-Eigenschaft*

b *qualitas occulta*

c [*New Considerations on the relations of physics and morals;* properly *Nouvelles considérations sur les rapports du physique et du moral de l'homme*, Paris: Ladrange, 1834]

d *cause…cause ou force*

e *ratio sive causa*

f *Wirkung und Gegenwirkung*

a [*FW*, 52–6 (Hübscher *SW* 4, 29–36)]

b *desto leichterer Art kann die Einwirkung seyn*

***** ‘Whatever one wants to make, for a metaphysical purpose, of a concept of freedom of the will, the appearance of it, human actions, are determined according to universal natural laws just as much as any other natural occurrence.’ The beginning of *Idea for a Universal History* [*from a Cosmopolitan Point of View* Ak. 7: 17] –

> ‘All the actions of the human being in appearance are determined by his empirical character and the other cooperating causes according to the order of nature, and if we could thoroughly investigate all the appearances of his power of choice, then there would not be a single human action that we could not predict with certainty and recognize as necessary, given its

> preceding conditions. Thus in regard to this empirical character there is no freedom, and according to this character we can only consider the human being if we simply observe and, as occurs in anthropology, try to investigate physiologically the moving causes of his actions.' *Critique of Pure Reason*, p. 548 of the 1st and p. 577 of the 5th edn [A549–550/B577–578] –
>
> 'It may be admitted that if it were possible for us to have so deep an insight into a human's way of thinking, as it shows itself both through inner and outer actions, that every, even the least incentive to these actions and all external occasions which affect them, were so known to us, then his future conduct could be predicted as certainly as the appearance of a solar or a lunar eclipse.' *Critique of Practical Reason*, p. 230 of the Rosenkranz and p. 177 of the 4th edn [Ak. 5: 99]

a *Steigerung*

b *Wahlentscheidung*

c *Philosophieprofessorenwortkram*

a *Zitto, zitto*

b *Rockenphilosophie* [following Günther Zöller]

a δός μοι ποῦ στῶ ['give me a foothold': the saying, attributed to Archimedes, continues καὶ κινῶ τὴν γῆν, 'and I will move the earth']

b *Intellektualität*

c *Stoff*

d [Hübscher *SW* 7, 35–7]

e [see pp. 233, 278]

f [see p. 335]

a *objectiv-real*

b *Sinnesempfindung*

c *künstlich*

a *in abstracto*

b [*Neue Kritik der Vernunft* (*New Critique of Reason*), 1807]

c *umarbeitet*

d *Apprehension*

a *Vernunft* [connected with the verb *vernehmen,* 'to apprehend', esp. by hearing: cf. *BM* 149 (Hübscher *SW* 4, 147–8)]

b *in abstracto*

c *in concreto*

d *Beschaffenheit*

e *Gesetzmaßigkeit*

a *präformirt*

b *Lettre sur les aveugles* [*à l'usage de ceux qui voient* {*for the Use of Those Who See*} (1749)]

c [Hübscher *SW* 3, 44]

a *Affektion*

a *anschauen*

b *auffassen*

c *gleichnamige*

a *Centro*

***** The *Frankfurter Konversationsblatt* of 22 July 1853 reports on him: 'The blind sculptor *Joseph Kleinhanns* died on 10 July in Nauders (Tyrol). Blind since his fifth year as a result of cowpox, the boy played and carved as a pastime. Prugg gave him instruction and figures to copy, and in his twelfth year, the boy finished a life-sized Christ. In the workshop of the sculptor Nißl in Fügen he profited much in a short period of time, and on account of his good abilities and talents, he became a widely known blind sculptor. His various works are quite numerous. His images of Christ alone run almost to four hundred, and in these his mastery is apparent, taking into account his blindness. He also completed other noteworthy pieces, and two months ago a bust of Emperor Franz Joseph, which was shipped to Vienna.'

a *apprehendirt*

a *umgekehrt*

a *Einwirkung*

b *wirken*

c *Gränzen*

a *liest…ab*

b *mit Besonnenheit*

a *Folge*

b *Antheil*

c *physiologisches Farbenspektrum* [*Spektrum*, as a borrowing from the Latin, *spectrum*, ‘image’, might be translated as ‘afterimage’ when Schopenhauer refers to an image arising or remaining after strong stimulation, even with closed eyes; however, Schopenhauer uses the word both in this sense and in the common sense referring to the image cast by refraction through a prism]

d *nimmt…ein*

a *illustres confrères*

b *datis*

a *intuitiv*

a *perpendikularer Richtung*

a *Verstandeserkenntniß*

b *falsche Schein*

c *in abstracto*

a [*Morgenblatt für die gebildeten Stände* (after 1837 *Morgenblatt für gebildete Leser*)]

b *das verständige Anschauen*

[*] Feuerbach's *Caspar Hauser – Beispiel eines Verbrechens am Seelenleben eines Menschen*, Anspach, 1832, p. 79, etc. [*Caspar Hauser – An Example of a Crime against the Psychological Life of a Human Being* by Paul Johann Anselm von Feuerbach. Franz's note, repeated by Schopenhauer]

[**] Haslam's *Observations on Madness and Melancholy*, 2nd edn, p. 192. [Franz's note, repeated by Schopenhauer]

a *De la vie et de l'intelligence*

b *Opposition entre les tubercules et les lobes cérébraux*

c *Il faut faire une grande distinction entre les sens et l'intelligence. L'ablation d'un tubercule détermine la perte de la* sensation*, du* sens *de la vue; la rétine devient insensible; l'iris devient immobile. L'ablation d'un lobe cérébral laisse la* sensation*, le* sens*, la* sensibilité *de la rétine; la* mobilité *de l'iris; elle ne détruit que la* perception *seule. Dans un cas, c'est un fait* sensorial*; et, dans l'autre, un fait* cérébral*; dans un cas, c'est la perte du* sens*; dans l'autre, c'est la perte de la* perception*. La distinction des perceptions et des sensations est encore un grand résultat; et il est démontré aux yeux. Il y a deux moyens de faire perdre la vision par l'encéphale: 1° par les tubercules, c'est la perte du sens, de la sensation; 2° par les lobes, c'est la perte de la perception, de l'intelligence. La sensibilité n'est donc pas l'intelligence, penser n'est donc pas sentir; et voilà toute une philosophie renversée. L'idée n'est donc pas la sensation; et voilà encore une autre preuve du vice radical de cette philosophie*

d *Séparation de la Sensibilité et de la Perception*

a *Il y a une de mes expériences qui sépare nettement la* sensibilité *de la* perception. *Quand on enlève le* cerveau proprement dit (lobes *ou* hémisphères cérébraux) *à un animal, l'animal perd la vue. Mais, par rapport à l'oeil, rien n'est changé: les objets continuent à se peindre sur la rétine; l’*iris *reste contractile, le* nerf optique *sensible, parfaitement sensible. Et cependant l'animal ne voit plus; il n'y a plus* vision*, quoique tout ce qui est* sensation *subsiste; il n'y a plus* vision*, parce qu'il n'y a plus* perception. *Le* percevoir*, et non le* sentir, *est donc le premier élément de l’*intelligence. *La* perception *est partie de l’*intelligence*, car elle se perd avec l’*intelligence*, et par l'ablation du même organe, les* lobes *ou* hémisphères cérébraux*; et la* sensibilité *n'en est point partie, puisqu'elle subsiste après la perte de l’*intelligence *et l'ablation des* lobes *ou* hémisphères

b Νοῦς ὁρῇ καὶ νοῦς ἀκούει· τ᾽ ἆλλα κωφὰ καὶ τυφλά· (*Mens vidit, mens audit; caetera surda et coeca*)

c *De sollertia animalium* [961a]

d ὡς τοῦ περὶ τὰ ὄμματα καὶ ὦτα πάθους, ἂν μὴ παρῇ τὸ φρονοῦν, αἴσθησιν οὐ ποιοῦντος [961a–b] (*quia affectio oculorum et aurium nullum affert sensum, intelligentia absente*)

e Στράτωνος τοῦ φυσικοῦ λόγος ἐστίν, ἀποδεικνύων ὡς οὐδ᾽ αἰσθάνεσθαι τὸ παράπαν ἄνευ τοῦ νοεῖν ὑπάρχει. [961a–b] (*Stratonis physici exstat ratiocinatio, qua ‘sine intelligentia sentiri omnino nihil posse’ demonstrat*)

f ὅθεν ἀνάγκη, πᾶσιν, οἷς τὸ αἰσθάνεσθαι, καὶ τὸ νοεῖν ὑπάρχειν, εἰ τῷ νοεῖν αἰσθάνεσθαι πεφύκαμεν (*quare necesse est, omnia, quae sentiunt etiam intelligere, siquidem intelligendo demum sentiamus*)

g Εὔμαιε, τὸ σοφόν ἐστιν οὐ καθ᾽ ἕν μόνον, | ᾽Αλλ᾽ ὃσσα περ ζῇ, πάντα καὶ γνώμαν ἔχει

> (*Eumaee, sapientia non uni tantum competit, sed quaecunque vivunt etiam intellectum habent*) [*The Lives and Opinions of Eminent Philosophers*, III ‘Life of Plato’, 12]

a *De abstinentia* [*On abstinence from animal food*]

b *Feinheit*

c [In a letter to Frauenstädt, 9 December 1849, Schopenhauer laments the premature death of his white poodle ‘Atma’ (*GB* 240); shortly thereafter he acquired a brown poodle that he also called ‘Atma’ or by the affectionate ‘Butz’]

d *Verstand*

e *Vernunft*

f *und vom Verstande allein verstanden wird*

a *Verstehn*

b *Verständniß*

c *Waidspruch* [‘experience and calculation’]

d *Motivation*

a *Klugheit*

b *Schlauheit*

c *Pfiffigkeit*

d *Verschmitzheit*

e [Cf. ‘Of the Idea of necessary Connexion’, *Philosophical Essays Concerning Human Understanding* (1848), known today as *An Enquiry Concerning Human Understanding*]

a *Willensakt*

b [Hübscher *SW* 3, 41–2]

c [A367–380]

a [A371, A372]

b *Begriffserkenntniß*

c *anregen*

d *Beschaffenheit*

a *Nach-außen-verlegen*

b *Wirkungsart*

c *die bloße Wirksamkeit überhaupt*

d *Wirken*

e *ihr Wesen ist das Wirken überhaupt*

f [Hübscher *SW* 2, 10; *SW* 3, 52–3]

g *Wechsel*

a *in abstracto*

b *Art des Wirkens*

c *in concreto*

d *Wissenschaftsleere* [we are indebted to Christopher Janaway for this translation of a term Schopenhauer frequently used to refer to Fichte's *Wissenschaftslehre*, ‘Science of Knowledge’]

e *Jena'schen Litteratur-Zeitung*

f *Intelligenzblatt der Jena'schen Litteratur-Zeitung*

g *das Vermittelnde*

a *zu dem jedesmaligen Leibe des Alles erkennenden Subjekts*

a [paraphrasing A201/B246]

b *Kausalität*

c [A189/B232]

d *Folge*

e *Apprehension*

f *Körper*

g *Leib*

h *Körpern*

a *Körperwelt*

a *Phantasmen*

b *Zufall* [chance], *Zusammentreffen* [concurrence], *Zusammenfallen* [coincidence]; τὸ συμβεβηκός [chance, coincident], συμβαίνειν [to come to pass]

c [73b, 1–15]

d *Erkenntniß*

a *erkennen*

b *wissen*

c *sensibeln Nerven*

d *nur daß ihm oft ein unmöglicher Stoff untergeschoben wird*

e *Nouveaux essais sur l'entendement*

f *la vérité des choses sensibles ne consiste que dans la liaison des phénomènes, qui doit avoir sa raison, et c'est ce qui les distingue des songes…Le vrai Critérion, en matière des objets des sens, est la liaison des phénomènes, qui garantit les vérités de fait, à l'égard des choses sensibles hors de nous*

g *Folge*

a *uns…denken*

b *alles Erfolgen*

c *bloßes Folgen*

d *die Folge*

e *folge*

f *erfolge*

g [A275/B331]

h *Succession*

i *Kenntniß*

j *wirklich*

k *Grundform*

a [A203/B249]

b *unterscheidende Merkmale*

c *Folgen*

d *Wirkungseyn*

e *Wirklichkeit*

f *Realität*

a *Wechselwirkung*

b [A211–215/B256–262]

c [paraphrasing A212/B259]

d [A213/B260; emphasis and parenthetical material are Schopenhauer's]

e [*Uber Raum und Causalität, zur Prüfung der Kantischen Philosophie* (*On Space and Causality, Toward a Examination of Kantian Philosophy*), Göttingen: J. C. Diederich, 1787]

f [*Kritik der theoretischen Philosophie*, 2 vols. Hamburg: Carl Ernst Bohn, 1801]

g [*Neue Kritik der Vernunft* (*New Critique of Reason*), 1807]

h Ἀχλὺν δ᾽ αὖ τοι ἀπ᾽ ὀφθαλμῶν ἕλον, ἣ πρὶν ἐπῆεν [*Iliad* 5.127]

a [Hübscher *SW* 3, 46ff.]

b *Vorrichtung*

c *Adversus Mathematicos*

d *cavalièrement*

e [156d]

a [suddenly]

b *an einander gränzen*

c *Ausgedehnte*

d *zwei Jetzt*

e *schwächere Grade*

f *geringere Ausdehnungen*

a *Dissertatio de mundi sensibilis et intelligibilis forma* [*De mundi sensibilis atque intelligibilis forma et principiis*: Kant's Inaugural Dissertation (1770)]

b [A207ff./B253ff.]

c οὐκ ἔστι ἀλλήλων ἐχόμενα τὰ νῦν [*Physics* 218a]

d *lex continuitatis*

e *loi de la continuité*

f *principe de l' ordre général*

g *opera philos*[*ophica,* ed. Johann Eduard Erdmann. Berol: G. Eichler, 1840]

[97] Fifth Chapter On the second class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 26 Explanation of this class of objects[81]

The only essential distinction between humans and animals (which has always been attributed to *reason*, a very special cognitive faculty exclusive to humans) is based on the fact that humans have a class of representations which no animal shares: these are *concepts*, that is, *abstract* representations, as opposed to the intuitive representations from which, however, concepts are derived. The immediate result of this is that animals neither speak nor laugh, but the mediated result is the many and significant ways in which human life is distinguished from that of the animal. For a different sort of motivation has now come about through the addition of abstract representations. Although the actions of humans follow with no less strict necessity than those of animals, because of the kind of motivation humans have, insofar as it consists of *thoughts* which make possible *elective decisions*[a] (i.e. the conscious conflict of motives), purposeful, deliberate action, in accord with plans and maxims, in unison with others, etc. has replaced the mere impulse from present objects of intuition. But this has brought about [98] everything that makes the life of humans so rich, so cultivated, and so terrible, that here in the West, which has made them pale and white, and where the ancient, true, profound, original religions[b] of their homeland could not follow, humans no longer recognize animals as their brothers, but believe them to be something fundamentally different from themselves; and to maintain this illusion, humans call animals beasts, assigning derogatory terms to all the vital functions which humans have in common with them, considering them to be without rights, as humans steel themselves against the identity of essence[c] they share with the animals, an identity which still presses itself upon them.

Nevertheless, as was just said, the entire distinction consists in that, apart from intuitive representations, which were considered in the previous chapter and which in any case animals share, the human being also holds in his brain (which, mainly for this purpose, is so much more voluminous) abstract representations, i.e., those derived from intuitive representations. Such representations have been called *concepts*[a] because each of these subsumes[b] in itself – or, rather, under itself – innumerable individual things, and is thus itself a *totality*[c] of individual things. They can also be defined as *representations of representations*. For with their formation, the faculty of abstraction reduces[d] complete and hence intuitive representations (which were discussed in the previous chapter) to their constituents in order to be able to think about these separately, each in itself, as different properties or relations of things. But now, with this process, representations necessarily lose their intuitive quality, just as water loses its fluidity and visibility when reduced to its constituents. For every property thus separated (abstracted) can indeed be *thought* of in isolation,[e] however, not *intuited* in isolation. The formation of a concept occurs generally by dropping much from what is given intuitively in order to be able to think in isolation of what remains. A concept is thus a reduction in thought[f] of that which is intuited. When various intuitive objects are considered, if something different is dropped from each and still something the same remains among all, this is the *genus* of any species. Hence the concept of any *genus* is the concept of every species subsumed under it after the removal of everything which does not belong to *all* of the species. Now, however, any possible concept can be thought of as [99] a *genus*; therefore, it is always something general and, as such, not something intuitive. For that reason, a concept also has a *sphere*, which is the totality[g] of everything conceivable through the concept. Now the higher the level of abstraction, the more is lost, and therefore the less is thought. The highest, i.e., the most general concepts, are the emptiest and poorest; ultimately these are just empty shells, as, e.g., being, essence, thing, becoming, etc. – Incidentally, whatever could philosophical systems produce when they are merely spun out of these same concepts and have as their matter only such empty shells of thought? They must be infinitely empty and poor, and therefore, turn out to be tedious and suffocating.

Now since, as I have said, representations that are sublimated,[h] and thereby decomposed[i] into abstract concepts, have forfeited all their intuitive quality, they would completely escape consciousness and would thus have no value for the intended operations of thought if they were not fixed and held fast in our senses by arbitrary signs: these signs are words. Therefore insofar as they make up the contents of the lexicon, that is, of language, words always refer to *general* representations, concepts, never to intuitive things: whereas a lexicon which lists individual things contains not words, but only proper names and is either a geographical or a historical lexicon, i.e., either listing that which is separated by space or by time, since as *my* readers know, time and space are the *principium individuationis*.[a] Simply because animals are limited to intuitive representations and not capable of abstraction (hence, not capable of concepts), they have no language, even if they are able to pronounce words. In contrast, they understand proper names. That the same deficiency excludes them from laughter is evident from my theory of the laughable,[b] in the first book of *The World as Will and Representation* § 13, and Vol. 2, ch. 8.[c]

If we analyse a lengthy and continuous speech of a completely uneducated human being, we will find in it such an abundance of logical forms, structures, figures of speech, distinctions, and subtleties of all sorts, correctly expressed by means of grammatical forms, with their inflections and constructions – even with frequent application of indirect speech[d], the different [100] modes of verbs, etc. – everything according to rule, so that it is astonishing, and we must recognize in it a very extensive and coherent learning.[e] However, the acquisition of this occurs on the basis of the apprehension of the intuitive world, the complete essence of which it is the fundamental business of reason to set down in abstract concepts, a business reason can only carry out through language. With the acquisition of language, then, the whole mechanism of reason, that which is essential to logic, is brought to consciousness. Obviously this cannot occur without great intellectual effort and eager attentiveness, and children are endowed with the power for such attentiveness by their desire to learn, which is strong when they see for themselves its true usefulness and necessity, and appears weak only when we try to force on children that which is unsuitable to them. Thus with the acquisition of language, together with all its figures of speech and subtleties, as much as by means of listening to adult speakers as by means of speaking themselves, children – even those brought up uneducated – complete this development of their reason and acquire that genuine, concrete logic, which consists not in rules of logic, but in the immediate, correct application of logic, just as a musically talented human being acquires the rules of harmony without reading notes and studying thorough bass, but merely through playing the piano by ear. – Only the deaf and dumb do not go through the above-mentioned schooling in logic by means of the acquisition of language; therefore, they are nearly as irrational as animals if they do not receive the artificial instruction suitable to them by learning to read, which for them is the surrogate of this natural schooling of reason.

§ 27 Uses of concepts[82]

As has been shown above, our reason, or the faculty of thought, has as its fundamental essence the capacity for abstraction, or the ability to form *concepts*; thus, it is the presence of these in consciousness which produces such astonishing results. That reason is able to do this is in essence based on the following.[83]

Precisely [101] because concepts contain less than the representations from which they are abstracted,[a] they are easier to handle than these representations and are related to them in somewhat the same way as the formulas of higher arithmetic are related to the operations of thought from which they are derived and which they represent, or as the logarithm is related to its number. Of the many representations from which they are abstracted, concepts contain only the very part that is being used; if instead one wanted to bring to mind any representation itself through the imagination, one would have to drag along a load of inessentials and would be confused by them;[84] now, however, by applying concepts one thinks of only the parts and relations of all these representations that are needed for the task at hand. Thus their use can be compared to casting off useless baggage or also compared to working with quintessences instead of with the species of plants themselves or with the quinine instead of the cinchona bark. What is properly and in the strict sense of the word called *thinking* is in general the occupation of the intellect with *concepts*, the presence in consciousness of the class of representations that is now taken under consideration. Thinking is also designated by the word *reflection*, which, as an optical metaphor, expresses at the same time the derivative and secondary nature of this type of cognition. Now this thinking, this reflection, imparts to humans that *discretion*[a] which animals lack. For, since reflection makes it possible for humans to think of thousands of things with one concept, but always to think about only what is essential, humans can, as preferred, ignore differences of all kinds, even the difference between space and time. It is the means by which human beings achieve in thoughts a view of the past and future, as well as of that which is absent, while in this regard the animal is tied to the present. Now again, this discretion, this ability to *deliberate*,[b] this presence of mind, is actually the root of all human theoretical and practical achievements, through which humans so greatly surpass animals; namely, it is first of all the root of concern for the future, with regard to the past, and afterwards of intentional, systematic, methodological procedure in every project, and then of the cooperation of many toward a single goal, hence of order, of law, of the state, etc. – However, concepts are [102] especially the proper material of the natural sciences and humanities,[c] the aims of which ultimately are to trace knowledge of the particular through the universal, which is possible only by means of the principle of all and nothing,[d] and this again is only possible through the existence of concepts.[85] Therefore, Aristotle said, ‘without the universal, it is impossible to get knowledge’ (*Metaphysics* XII, ch. 9).[e] Concepts are just those *universalia* over whose existence the realists and the nominalists fought for so long in the middle ages.

§ 28 Representatives[f] of concepts. The power of judgement[86]

As has already been said, a concept is not at all to be confused with a mental image, which is an intuitive, complete and hence particular representation not immediately brought about by an impression on the senses, and thus not belonging to the complex of experience. However, a mental image is then also to be distinguished from a concept when a mental image is used as a *representative of a concept*. This occurs when one wants to take an intuitive representation from which a concept arose and make it correspond to this concept, which is always impossible, as, e.g., there are no representations of ‘dog’ in general, of ‘colour’ in general, of ‘triangle’ in general, of ‘number’ in general – no mental images corresponding to these concepts. As soon as one calls up the mental image, e.g., of some dog, it must, as representation, be thoroughly determined, i.e., of some specific size, a definite form, colour, etc. while the concept that it represents has no such determining characteristics.[a] However, with the use of such a representative of a concept, one is always aware that the mental image does not adequately represent the concept, but is full of wholly arbitrary determinations. *Hume* in his *Essays on Human Understanding*,[b] toward the end of Essay 12, Pt. 1, and *Rousseau* too, *On the Origin of Inequality*,[c] in the middle of Pt. 1, are in agreement with what is said here. In contrast, in the chapter on ‘Schematism of the Pure Concepts of the Understanding’,[d] Kant teaches something completely different. Only inner observation [103] and clear deliberation can decide the matter. Hence, one should investigate whether in one's concepts one is aware of a ‘monogram of pure *a priori* imagination’,[e] e.g., when one thinks of dog, one is conscious of something between dog and wolf,[f] or whether, according to the explanations put forth here, either one thinks of a concept through reason, or through the imagination one puts forth[g] some representative of the concept as a complete image.

All thinking, in the broader sense of the word, and so all inner intellectual activity in general, requires either words or images;[h] without one of the two, thinking has no content. But both are not required simultaneously, although they are able to work together for mutual support. Now thinking in the narrower sense, or abstract thinking carried out with the aid of words, is either purely logical reasoning, in which case it then remains completely in its own domain, or it touches on the limits of intuitive representations in order to come to an understanding of them[i] for the purpose of connecting what is given empirically and grasped intuitively with clearly thought-out, abstract concepts so as to completely possess it. Thus for an intuitively given case, thinking seeks either the concept or the rule to which the case belongs; or instead, for a given concept or rule, it seeks the case which verifies it. This feature is the activity of the *power of judgement*, and indeed (following Kant's division) in the first case, it is a reflecting activity and in the second, a subsuming activity. Accordingly, the power of judgement is the mediator between the intuitive and the abstract modes of cognition, or between understanding and reason. For most people the power of judgement is only rudimentary, often even just nominal:[*] they are destined to be led by others. One should have nothing more to say to them than what is necessary.

Thinking, operating with the aid of intuitive representations, is the real core of all cognition, as it can be traced back to the source, to the basis of all concepts. Therefore [104] it is the producer of all truly original thoughts, all primary fundamental insights, and all discoveries, insofar as chance has not taken the major role in these. In such originality the *understanding* is predominantly active, as *reason* is with purely abstract thought in the narrower sense. Among these belong certain thoughts that run through our minds, coming and going, dressing themselves first in this and then in that intuition, until finally, achieving clarity, they fix themselves in concepts and find words. Indeed, there are some which never find words, and unfortunately, these are the best: 'that are too good for words', as Apuleius said.[a]

But *Aristotle* went too far when he claimed that no thinking can occur without mental images. Aristotle's remarks in the book, *On the soul*, III, chs. 3, 7, 8 – such as 'the soul never thinks without a mental image',[b] and 'if one contemplates, one must necessarily contemplate with some mental image',[c] and similarly in *On memory*, 'a thought is impossible without a mental image'[d] – made a great impression on thinkers of the fifteenth and sixteenth centuries, by whom they were often and emphatically repeated, as e.g., Pico della Mirandola said in *On the imagination*, ch. 5: 'for he who reasons and thinks, must do so while viewing mental images'[e] – Melanchthon*, On the soul*, p. 130, says: 'whoever thinks must view mental images'[f] – and Giordano Bruno, *On the composition of the imagination*, p. 10, says, 'Aristotle says: he who wants to know, must view mental images'.[a] *Pomponatius,* O*n immortality*,[b] pp. 54 and 70, also expresses himself in this sense. – Only this much can be maintained: that any true and original knowledge, even any genuine philosopheme, at its innermost core, or at its root, must have some kind of intuitive apprehension.[c] Although something momentary and single,[d] this subsequently imparts spirit and life to the entire explanation, no matter how exhaustive – just as a small drop of the right reagent imparts the colour of the resulting precipitate to the whole solution. If the explanation has such a core, it is like a banknote payable in cash; in contrast, any other explanation arising out of a mere combination of concepts is like a banknote [105] which is itself again secured only by the backing of other promissory notes. Any purely rational verbiage is merely a clarification of what follows from given concepts, which actually brings nothing new to the light of day, and so, instead of endlessly filling entire books with it, it could be left for one to figure out oneself.[87]

§ 29 Principle of sufficient reason of knowing[88]

Yet thinking in the narrower sense does not consist in the mere presence of abstract concepts in consciousness, but rather in a combination or separation of two or more concepts under the various restrictions and modifications that logic specifies in the theory of judgements. Such a clearly thought-out and expressed relation of concepts[e] is specifically called a *judgement*. Now in relation to this judgement, the principle of reason is again applicable, however, in a very different form from the one stated in the previous chapter, namely as the principle of reason of knowing,[f] *principium rationis sufficientis cognoscendi*. As such it says that if a judgement would express *knowledge*,[g] it must have a sufficient ground, and on account of this property it receives the predicate *true. Truth* is thus the relation of a judgement to something distinct from it which is called its ground, and as we will soon see, even admits of a significant variety of forms. However, since a ground is always something on which a judgement is supported, or on which it rests, the German term *Grund* is aptly chosen. In Latin, and all of the languages derived from it, the term for the ground of knowledge is identical with that for *reason*, that is, both are called *ratio*, *la ragione*, *la razon*, *la raison*, *the reason*. From this it is evident that knowledge of the grounds of judgement is recognized as the preeminent function of reason, its business *par excellence.*[a] Now these grounds, upon which a judgement can rest, can be divided into four types, and the truth which each attains is different, according to its type. These four types of truth are presented in the next four sections.

[106] § 30 Logical truth[89]

A judgement can have another judgement as its ground. Its truth then is *logical* or *formal*. Whether it also has material truth remains undecided and depends on whether the judgement that supports it has material truth or the series of judgements on which it is grounded traces back to a judgement of material truth. – Such grounding of one judgement on another always arises through an equivalence[b] with it; now this occurs either immediately in mere conversion or contraposition of the same, or even by the addition of a third judgement from which the truth of the judgement to be grounded becomes evident from the mutual relations of the other two. This operation is a complete *inference*.[c] It is brought about both by opposition and by subsumption of concepts. Since an inference, as grounding of one judgement through another, by means of a third, always concerns only judgements and these are only combinations of concepts, which are the exclusive objects of reason, inferring[d] has been correctly explained as the unique business of reason. The whole of syllogistics is the aggregate of rules for applying the principle of reason to the mutual relations of judgements, thus it is the canon of *logical truth*.[90]

Those judgements the truth of which is evident from the four well-known laws of thought[91] can be seen as grounded through another judgement, for even these four well-known laws of thought are judgements from which the truth of the other judgements follows. E.g. the judgement 'a triangle is a space enclosed by three lines' has as its ultimate ground the principle of identity, i.e., the thought expressed by this principle. The judgement, 'no body is without extension', has as its ultimate ground the principle of contradiction. The judgement, 'every judgement is either true or not true', has as its ultimate ground the law of the excluded middle. Finally, the judgement, 'no one can accept something as true without knowing why', has as its ultimate ground the principle of sufficient reason of knowing. Since the greatest part of humankind has never heard of these abstract laws, [107] in ordinary reasoning judgements following from the four laws of thought are accepted as true even without their first being traced back to these four laws as their premises. Nonetheless, this fact makes those judgements no less dependent on these laws as their premises. For when someone says 'if the support for a body is taken away, then it will fall', this judgement could have been made without one's ever being aware of the principle ‘all bodies gravitate toward the centre of the earth’; nonetheless, this judgement would still depend on this principle as its premise. Therefore, I cannot accept that up to now in logic an *intrinsic truth*[a] was attributed exclusively to judgements grounded in the laws of thought, i.e., that intrinsic truths were explained as *immediately true* and that this *intrinsic logical truth*[b] was distinguished from *extrinsic logical truth*,[c] which would be to ground one judgement on another judgement.[d] Every truth is the relation[e] between a judgement and something beyond it, and *intrinsic truth* is a contradiction.

§ 31 Empirical truth[92]

A representation of the first class, that is, an intuition mediated by the senses, an experience, can be the ground of a judgement; then the judgement has *material* truth and indeed this is *empirical truth* insofar as the judgement itself is *immediately* grounded on experience.

To say that a judgement has *material* truth generally means that its concepts are as mutually connected, separated, or limited as is required by the intuitive representations through which the judgement is grounded. To know this is the immediate concern of the *power of judgement*, which, as has been said, is the mediator between the intuitive faculty and the abstract (or discursive) cognitive faculty, thus between understanding and reason.

[108] § 32 Transcendental truth[93]

The forms of intuitive empirical cognition, lying in the understanding and pure sensibility as conditions of the possibility of all experience, can be the ground of a judgement, which is then a synthetic *a priori* judgement. Nevertheless, since such a judgement has material truth, it is a transcendental judgement because the judgement is not merely based on experience, but on the conditions that lie in us for the entire possibility of experience. For the judgement is determined through just that through which experience itself is determined: namely, either through the *a priori* forms of space and time intuited by us, or through the law of causality known to us *a priori*. Examples of such judgements are propositions such as: two straight lines do not enclose a space – nothing occurs without a cause – 3 × 7 = 21 – matter can neither arise nor perish. Actually, the whole of pure mathematics could be cited as an example of this type of truth, no less than my table of praedicabilia *a priori*, found in the 2nd volume of *The World as Will and Representation*,[a] as well as most principles in Kant's *Metaphysical Foundations of Natural Science*.

§ 33 Metalogical truth[94]

Finally the formal conditions of all thought that lie in our reason can also be the ground of a judgement, the truth of which is then of a kind that I believe described if best I call it *metalogical truth.* This expression in any case has nothing to do with the *Metalogicon*[b] which *John of Salisbury*[c] wrote in the twelfth century, in his prologue he explains, 'since I take up the defence of logic, this book is called *Metalogicon*',[d] and then he makes no further use of the word.[95] But there are only four such judgements of metalogical truth,[96] which were long ago found through induction and called laws of all thinking, although there has not always been unity about their number and the way to express them, while there is complete agreement about what they are [109] supposed to indicate in general. They are the following: 1) A subject is equal to the sum of its predicates, or a = a; 2) A predicate cannot at the same time be attributed to and denied of a subject, or a = ∼a = 0;[97] 3) Of any two contradictory, opposing predicates, one must belong to every subject; 4) Truth is the relation[a] of a judgement to something outside it, as its sufficient ground.[98]

We know through a reflection, which I prefer to call a self-examination of reason, that these judgements are the expression of conditions of all thinking and, thus, have these conditions as their ground. In making vain attempts to think contrary to these laws, reason recognizes them as conditions of the possibility of all thinking; we then find that to think contrary to them is of as little avail as it is to move our limbs against the direction of their joints.[99] If the subject could cognize itself, then we would also recognize these laws *immediately* and not first through investigation of objects, i.e., representations. In this regard it is just the same with the grounds of judgements of transcendental truth, and they do not come to consciousness immediately, but only concretely,[b] by means of objects, i.e. representations. E.g. if we were to attempt to think of an alteration without a prior cause, or even of an arising or perishing of matter, then we would become aware of the impossibility of such a thing, that is, as an objective impossibility, although it has its root in our intellect; otherwise, we certainly could not bring it to consciousness in a subjective way.[100] In general, a great similarity and relation is noticeable between transcendental and metalogical truths, indicating a common root for both. Here we see the principle of sufficient reason as metalogical truth, after it appeared in the previous chapter[c] as transcendental truth, and in the following chapter[d] it will appear in still another form as transcendental truth. That is precisely why I have taken the trouble in this essay to present the principle of sufficient reason as a judgement that has a fourfold ground – not as four distinct grounds that produce the same judgement by chance, but as one ground presenting itself as fourfold, which I figuratively call the fourfold root. The [110] three other metalogical truths are so greatly similar to one another that almost out of necessity one must strive to find for them a common expression, just as I have done in the 9th chapter of the second volume of my principal work. Conversely they are very different from the principle of sufficient reason. If an analogue for these three other metalogical truths were sought among the transcendental truths, then the analogue likely to be chosen would be: substance – I mean to say matter – is permanent.[101]

§ 34 Reason[102]

Since the class of representations considered in this chapter belongs only to humans, and since everything that so powerfully distinguishes human life from that of animals and gives humans such great advantage over them (as has been proven) is based on the capacity[a] for these representations, then these representations obviously and indisputably constitute *reason*, which has always been reputed to be the advantage of humankind, just as everything that at all times and by all peoples has been expressly regarded as the manifestation or result of reason, of the λόγος, λόγιμον,[b] τὸ λογιστικόν, *ratio*, *la ragione*, *la razon, la raison, reason*, obviously reduces to what is made possible only by abstract, discursive, reflective, mediated cognition,[c] tied to words, but not to the merely intuitive, immediate, sensible cognition that animals also share. In *On Duties*,[d] I, 16, Cicero quite correctly associates reason and speech[e] describing them as 'that which by teaching, learning, communicating, negotiating, and judging unites humans',[f] etc. Similarly in *On the Nature of the Gods*,[g] II, 7, 'I call it reason, or, if you prefer many words, mind, deliberation, cogitation, prudence'.[h] Also, in *On the Laws*,[i] I, 10, 'reason, which alone constitutes an advantage over the animals, through which we have the power for conjecture, for proving, for refutation, for discussion, for concluding something, for inferring'.[j] All philosophers in all places and at all times spoke of reason in this sense until Kant, who himself still described it as the faculty of principles and inference – though [111] it is not to be denied that he gave rise to subsequent distortions. In *The World as Will and Representation*, Vol. 1, § 8, and in the appendix, pp. 577–85[k] and again Vol. 2, ch. 6, finally in *The Two Fundamental Problems of Ethics*, pp. 148–54,[l] I have already spoken at length about the agreement of all philosophers on this point and about the true nature of reason, in contrast to the falsification of the concept of it by philosophy professors in this century. I need not repeat everything which is said there; rather, I add the following observations.

Philosophy professors have found it advisable to do away with the name by which reason was previously indicated and the sense in which reason has always been understood by all peoples and also by all philosophers; instead, philosophy professors no longer give the name reason to the faculty of thinking and contemplating through reflections and concepts, the faculty which distinguishes humans from animals, the faculty which language requires and which makes language possible – language, on which human discernment and all human achievements depend – but against all conventional use and all common sense they no longer call it *reason*,[a] but *understanding*,[b] and instead of calling everything derived from it *rational*,[c] they call it *intelligent*,[d] which must always appear out of place[e] and gauche, and indeed as a discordant note. For always and everywhere, the immediate and more intuitive faculty that was described in the previous chapter was designated as *understanding*, *intellectus, acumen, perspicacia, sagacitas*, etc. and the results that were derived from it, and that were specifically different from the rational results under discussion here, were called intelligent, clever, subtle, etc. That is why intelligent and rational were always clearly distinguished as expressions of two completely and widely different intellectual capacities. But the philosophy professors could pay no attention to this, for their politics demanded this sacrifice, and in such cases they said: 'Out of the way, truth! We have higher, well-defined aims: out of the way! For the greater glory of God,[f] do as you have long been trained to do! Do you pay some kind of honorarium or wages? Out of the way, truth, out of the way! Go where you belong: go cower in the corner.' That is, they needed the place and name of *reason* for an invented, [112] fabricated, or (to put it more correctly and straightforwardly) a completely fictitious faculty that was supposed to rescue them from the perils in which *Kant* had put them, a faculty for immediate, metaphysical knowledge, i.e., one going beyond all possibility of experience, one grasping the world of things in themselves and its relations, hence, a faculty that is above all a 'consciousness of God', i.e., one that immediately cognizes the Lord God, construing *a priori* how he created the world, or (if that should be too trivial) how he developed the world out of himself through a more or less necessary life process, how he, so to speak, begat the world, or even, as was most convenient (if at the same time most comic) how, as was the custom of noblemen in ending an audience, he merely 'dismissed' the world so that it might take to its feet and march on wherever it wants. Only the mind of an insolent nonsense-scribbler[a] like Hegel would be bold enough for this last. Thus it is the same tomfoolery that for fifty years, under the name of cognition of reason, spun-out at length, fills hundreds of books pretending to be philosophy, books which (one would suppose ironically) are called 'science' and 'scientific', even repeating these expressions to the point of nausea. *Reason* (to which all such wisdom is audaciously imputed) is explained as a 'faculty of the supersensible', and even 'of ideas', in short, as an oracular faculty lying within us, designed immediately for *metaphysics*. For fifty years, great difference of opinion has prevailed among the adepts about the manner of their perception[b] of all these marvels[c] and supersensible perceptions.[d] According to the most impudent, reason has an immediate rational intuition of the absolute, or even, if you prefer, of the infinite,[e] and its evolution[f] into the finite. According to others, who are somewhat less pretentious, it behaves more like a listener than a seer, since it does not exactly intuit, but merely *apprehends*[g] what goes on in Cloudcuckooland,[h] and then repeats it faithfully to the so-called understanding, which then writes philosophical compendia. And following Jacobi's pun, reason[i] is supposed to have its name from this alleged apprehension[j] – as if it were not obvious that the pun is taken from language [113] (which itself depends on reason), and from the apprehension of words (in contrast to mere hearing, which animals also have). But this wretched pun has flourished for half a century, has passed as a serious thought – even as a proof – and has been repeated a thousand times. Finally, according to the least pretentious, reason neither sees nor hears, and thus experiences neither the view nor the report of all these so-called marvels, but has nothing further of them than a mere presentiment, *Ahndung,* from which word now, however, the d has been eliminated,[k] giving the word a quite singular touch of silliness, which, supported by the sheepish look[l] of the current apostle of such wisdom, must necessarily secure[m] its entry.

But as my readers know, I accept the word *idea* only in its original, Platonic sense, and I have thoroughly discussed it, particularly in the 3rd book of my principal work. On the one hand, the French and English attach to the word *idée* or *idea*, a very ordinary, but nonetheless quite specific and clear sense. On the other hand Germans, when one talks to them of ideas (particularly when it is pronounced *Uedähen*[a]), their heads begin to swim, all discernment abandons them, and they feel as if they were about to go up in a balloon. Then there was something for our adepts of rational intuition to do; therefore, the most impudent of all, the infamous charlatan Hegel, right away called his principle of the world and all things 'the idea' – and everyone thought he really had something there. – However, if one is not struck dumb, but asks, what, then, are these ideas, really (the faculty for which is defined as reason), then one usually gets as an explanation highfalutin', hollow, confused, verbiage, in convoluted sentences[b] of such length that a reader, if he has not already fallen asleep in the middle of such a sentence, in the end finds himself more in a state of stupefaction than of enlightenment – then again, he may suspect that it was intended as a chimera. Meanwhile, if he desires a special acquaintance with ideas of this kind, then all sorts of things are soon dished up for him: namely the scholastics' principal themes, which unfortunately, Kant himself [114] unjustifiably and erroneously called 'ideas of reason', as I have explained in my critique of his philosophy.[c] However, he did so only to show them to be something absolutely indemonstrable and theoretically unjustifiable: specifically the representations of God, an immortal soul, and of a real, objectively existing world and its order – which, as variations are also cited merely as ‘God’, ‘freedom’, and ‘immortality’. Sometimes it is said to be the absolute, which we have recognized in § 20 above as the cosmological proof, compelled to travel incognito; and sometimes, however, it is said to be the infinite, in contrast to the finite, since the German reader, as a rule, is quite content with this verbiage and does not notice that in the end nothing can be clearly understood by this, except ‘that which has an end’ and ‘that which has no end’. Furthermore, other favourites, particularly among the sentimental and genial, are the alleged ideas ‘the good, the true, and the beautiful’, although these are three very broad and abstract concepts because they are drawn from countless things and relations, and hence are very poor in content, like thousands of other, similar abstractions. Concerning their content, I have demonstrated above in § 29 that truth is a property exclusively belonging to judgements, thus a logical property, and as for the two remaining abstractions under consideration here, for the first, I refer the reader to *The World as Will and Representation*, Vol. 1, § 65, and for the second, to the whole third book of the same work. However if these three meagre abstractions are treated with an air of downright mysteriousness and solemnity, with raised eyebrows, then young people could easily imagine the wonder that lies behind them – something completely out of the ordinary and inexpressible – so that they deserve the name ‘ideas’, and will be hitched to the triumphal car of this pretended metaphysical reason.

If it is thus taught that we possess a faculty for cognition which is immediate, material (i.e. providing the matter, not merely the form), and supersensible (i.e. leading beyond all possibility of experience), a faculty expressly intended for metaphysical insight, one inherent in us for such a purpose, and that this faculty comprises *our reason* – then I must [115] be so impolite as to call it a bare-faced lie. For the simplest, but most honest self-examination must convince anyone that such a faculty absolutely does not exist within us. Consistent with this is what has been proved in the course of time through the investigations of qualified, competent, honest thinkers: that what is innate and thus *a priori* and independent of the experience of our entire cognitive faculty is entirely limited to the *formal* part of cognition, i.e., to the consciousness of the intellect's own functions and the manner of their only possible activity, which functions, however, one and all require material from the outside in order to produce material cognition. Thus there lie in us, first, the forms of external, objective intuition, as space and time; and, next, the law of causality, which is the only form of the understanding, by means of which it constructs the objective corporeal world; and, finally, the formal part of abstract knowledge.[a] This last is laid down and presented in *logic*, which our forefathers have therefore quite correctly called the *doctrine of reason*. However, this very logic also teaches that *concepts,* which make up the judgements and conclusions to which all laws of logic refer, must obtain their *material*[b] and *content* from *intuitive* cognition – just as understanding creates *this* by taking the material which gives content to its *a priori* forms from sensation.

Thus everything *material*[c] in our cognition, i.e., everything which cannot be reduced to subjective *form* (to the very manner of activity, the very function of the intellect), hence, the entire content[d] of cognition, comes from the outside, that is, ultimately, from the objective intuition of the corporeal world, proceeding from sensation. It is this intuitive, empirical cognition which *reason* – *real* reason – following the material provided by cognition, then works up into concepts, which it sensibly fixes through words, and then it has the material for its endless combinations through the judgements and inferences that constitute the web of our world of thought. Thus *reason* has absolutely no *material*, but simply a formal content: this is the subject of logic, which therefore contains merely procedures [116] and rules for the operations of thought. Of course, in thinking, reason must take its material content from the outside, from the intuitive representations that the understanding has created. It exercises its function on these representations, as, in finally forming concepts, it eliminates some of the different properties of things and retains other properties, which it now combines into a concept. But representations thereby forfeit their intuitive quality, gaining, however, in comprehensibility and ease of use,[a] as has been shown above. – Thus this, and this alone, is the activity of reason; whereas reason can never produce *material from its own means*. – It has nothing but forms: it is feminine; it merely receives, but produces nothing. It is not by chance that it appears as feminine in Latin as well as German; whereas understanding is masculine.

Now if it is said that ‘Sound reason teaches this’, or that ‘Reason should rein in the passions’ and the like, then in no way does this mean that reason produces material knowledge from its own means; rather, this points to the results of rational reflection, to logical inferences from principles that abstract knowledge, enriched by experience, has gradually gained, and by virtue of which we can clearly and readily survey not merely that which is empirically necessary and hence to be foreseen, should the occasion arise, but the grounds and consequences of our own deeds as well. ‘Rational’ or ‘reasonable’ is everywhere synonymous with ‘consistent’ or ‘logical’, and the opposite is also true. For indeed, logic is just the natural method of reason itself expressed as a system of rules: these expressions (rational and logical) are related to one another as are practice and theory. A rational way of acting is understood in just this sense as a way of acting that is quite consistent, proceeds from universal concepts, and is intentionally led by abstract thoughts, but not determined by momentary, fleeting impressions; however, nothing is said about the morality of such a way of acting; on the contrary, it could be bad as well as good. Detailed explanations of this can be found in my ‘Critique of [117] Kantian Philosophy’ 2nd edn, p. 576 ff.,[b] as well as in *The Two Fundamental Problems of Ethics*, p. 152 ff.[c] Finally knowledge from *pure reason* (knowledge that we can bring to consciousness *a priori*, i.e., without the aid of experience) is such that its origins lie in the formal part of our cognitive faculty, be it thinking or intuiting. This sort of knowledge is always based on propositions that have transcendental or even metalogical truth.

In contrast, the idea of reason through its own means providing original material knowledge, knowledge therefore beyond all possibility of experience, positively enlightening us – the idea of reason as something that must contain *innate ideas* – is a pure fiction of philosophy professors, resulting from the anxiety evoked in them by the *Critique of Pure Reason*. – Are these gentlemen acquainted with a certain *Locke*, and have they read him? Perhaps once, a long time ago, superficially, in passages, in a poor, hackneyed German translation, looking down on the great man with conscious superiority – for I do not see an increase in knowledge of modern languages in proportion to the decrease in knowledge of ancient languages, no matter how much it is lamented. Of course they have had no time to waste on such old curmudgeons; in fact, even a real and fundamental knowledge of Kantian philosophy is at most to be found in some – very few – old fellows. For the youth of the generation now in manhood must have been expended on the works of that ‘giant intellect, Hegel’, of the ‘great Schleiermacher’ and the ‘discerning Herbart’. Alas! Alas! Alas! For this is just what is pernicious about such university celebrities and about what comes out of the mouths of decent colleagues in office and aspirants hoping to rise to the heroic heights of a university chair: that mere products of the factory of nature are praised as great minds, as the exceptions and ornaments of humankind, to good, faithful, youth of mediocre minds, lacking in judgement, so that these students dedicate themselves, with all their youthful energy, to the sterile study of such people's endless and mindless scribbling and squander the short and valuable time granted to their higher education, instead of devoting their youthful energy to real instruction, offered [118] by the works of rare, genuine thinkers, the true exceptions among humankind, ‘scattered swimmers in the vast abyss’,[a] who across the centuries have only now and then emerged, since even nature only occasionally produces their sort and then ‘breaks the mould’. These genuine thinkers would also have been alive for today's youth, had they not been cheated out of their share of these genuine thinkers by the exceeding perniciousness of those who praise the bad, those members of the great fellowship of sponsors of mediocre thinking, who always flourish and hoist their banners high as the regular enemies of the great and genuine, who humble them. Just because of these and their activities, the age has so declined that Kantian philosophy, which our fathers understood only after years of serious study and through great effort, has now become unknown to the current generation, before whom Kant's philosophy is like pearls before swine[a] and who try to attack it in a kind of crude, awkward, doltish way – as barbarians throw stones at statues of Greek gods unfamiliar to them. Because this is the way it is nowadays, it is incumbent upon me to recommend something new to the advocates of that reason that knows immediately – that comprehends, that intuits, in short, that reason that produces material knowledge from its own means – to recommend the *first* book of the world-famous, 150-year-old work of *Locke*, which is expressly directed against all innate knowledge, and especially to recommend the 3rd chapter, §§ 21–26.[b] For although *Locke* goes too far in his denial of all innate truths, insofar as he extends that denial to *formal* knowledge (for which Kant most brilliantly corrected him later), nonetheless he was perfectly and undeniably correct about all material knowledge, i.e., substantial knowledge.[c]

I have already said it in my *The Two Fundamental Problems of Ethics*; however, it must be repeated because, as the Spanish proverb teaches, there are none so utterly deaf as those who will not hear (*no hay peor sordo, que el que no quiere oir*): if *reason* were a faculty designed for metaphysics, a faculty providing the material of knowledge, and thus one giving information that extends beyond all possibility of experience, then concerning the subjects of metaphysics, and hence of religion too (since they [119] are the same), just as great agreement among the human race would have to prevail as concerning the subjects of mathematics, so that if someone deviated from others in his views, he would promptly have to be seen as not quite right in the head. But instead exactly the opposite takes place: on no theme is the human race so thoroughly divided as on this one. Ever since humans have begun to think, all philosophical systems have everywhere been in conflict, and some have been diametrically opposed to one another; and ever since humans have begun to have faith (which has been even longer), religions have been fighting one another with fire and sword, with excommunication and cannons. For in the time of quite lively faith there was not some insane-asylum for the occasional heretic, but prisons of the inquisition with all the appurtenances. Thus experience speaks here loudly and urgently against the deceptive pretence of a reason that would be a faculty of immediate, metaphysical knowledge or, to put it more clearly, of inspirations from above, and it is really high time for severe judgement about such a pretence; for terrible to say,[a] everywhere in Germany, year in and year out for the past half century, such a lame, such a palpable lie has been disseminated from the lectern to the students' bench and then has wandered from the bench back again to the lectern; indeed, even among the French there have been found a couple of pinheads[b] who have allowed themselves to be taken in by this fairy tale and then have returned to France with it, where, however, the good sense[c] of the French will show the door to *raison transcendentale*.

But then, where was the lie hatched and how has the fairy tale come into the world? – I must acknowledge that, unfortunately, *Kant's* practical reason, with its categorical imperative, first provided the occasion for[d] this fairy tale. That is, having once accepted practical reason, nothing further was needed, but to provide as its companion piece or its twin sister an equally imperial theoretical reason proclaiming metaphysical truths 'from the tripod'.[e] I have described the brilliant success of this action in *The Two Fundamental Problems of Ethics*, p. 148ff.,[f] to which I refer the reader. While I thus admit that *Kant* [120] provided occasion for this false assumption, I must add, however, that those fond of dancing readily find a piper. It is indeed like a curse that burdens the race of bipeds, that because of their affinity for the preposterous and bad, they are readily pleased by the worst – yes, by the very errors – in the works of great minds, so that they praise and admire these errors; whereas what is really admirable easily passes unnoticed. That which is truly great, that which is actually profound in Kant's philosophy, is now known by extremely few, for when serious study of his works ceased, the understanding of them ceased. For the sake of acquaintance with history, his works are read cursorily by a few, who imagine that what came after him was for the first time correct, and for this reason one notices that in all their talk about Kantian philosophy, they only know the shell, the surface of it; they take home a rough sketch of it, here and there snatching a word, but never penetrating to its profound sense and spirit. Now, what such people have always liked best in Kant are first the antinomies, something completely distorted, but even more, practical reason with its categorical imperative, and yet still more the moral theology based thereon, about which, however, Kant was never serious. Since a theoretical dogma of exclusively practical value is like a wooden flintlock that can be given to children without danger, it is also of the same type as 'wash my skin, but don't get it wet'. Concerning the categorical imperative itself, Kant never asserted it as a fact; rather the opposite: he repeatedly protested against this, and served it up merely as the result of a most amazing combination of concepts, because he needed a sheet anchor for morals. But philosophy professors have never investigated the foundation of the matter, so that, apparently, prior to me it has not once been recognized. Instead, they have hastily sought to bring credit to the categorical imperative as a firmly grounded fact, giving it the puristic name 'the moral law', which always reminds me of Bürger's 'Mamsell Laregle';[a] indeed, they have made of it something as solid as Moses' stone tablets, carved with the Decalogue, which, for them, the categorical imperative completely replaces. [121] In my treatise on the 'Foundation of Morals'[b] I have dissected practical reason with its imperative and have demonstrated so clearly and certainly that there has never been life nor truth in them, that I would like to see who could refute me with reasons and in an honest way help give the categorical imperative legs again. However, this does not disconcert philosophy professors. They can no more do without their 'moral law of practical reason' as a familiar *Deus ex machina* for grounding their morals than they can do without freedom of will, since these are two quintessential pieces of their old women's spinning-wheel philosophy. That I have dealt death blows to both makes no difference: for philosophy professors, the two live on – like a monarch already dead, who for political reasons is allowed to reign for a few more days. Against my relentless demolition of these two old fables, these brave men still use their old tactic: quietly, quietly, they slink past it imperceptibly, acting as if nothing had happened so the public will believe that what such a one as I have said is not worth hearing. Now, of course, they are called to philosophy by the ministry, and I am purely by nature. And it will turn out in the end that these heroes act like that idealistically minded bird, the ostrich, which thinks that if it just covers its eyes, the hunter will not see it. Well, now, good counsel comes with time: even if in the mean time (perhaps until I am dead and they can tailor my things to their liking) the public can content themselves with these gentlemen's bloviation,[a] insufferably boring ruminations, arbitrary constructions of the absolute, and nursery school morality – for later people will see further.

Tomorrow, then, the true shall have
All its friends well-disposed;
Even if today the base still
Gain the favour and full place.

West–East Divan p. 97[b]

But then do these gentlemen know the times? – A long prophesied epoch has begun: the church is tottering, [122] tottering so badly, that the question is whether it will once again recover its centre of gravity, for faith is lost. It is with the light of revelation just as with other lights: some darkness is the condition. A certain degree and extent of knowledge has considerably increased the number of those for whom faith is impossible. This attests to the general spread of insipid rationalism, which shows its bulldog countenance more and more. And, imagining itself to be wonderfully clever, it calmly prepares to measure with its tailor's ell the profound mysteries of Christianity, over which the centuries have brooded and disputed. Above all, the central dogma of Christianity, the doctrine of original sin, has become an object of childish ridicule for empty-headed rationalists because even for them nothing can be imagined to be more clear and certain than that everyone's existence has begun with birth, and therefore those coming into this world cannot bear guilt. How clever! – And just as when poverty and neglect gain the upper hand the wolves, under these circumstances so materialism, lying ever ready, takes the fore, arriving hand-in-hand with its accomplice, bestiality[c] (called humanism by certain people). – The need for knowledge increases with the inability to have faith. There is a boiling point on the scale of culture at which all faith, all revelation, all authority evaporate, at which people, according to their own lights, demand that they be instructed, but they also want to be convinced. The apron strings of childhood have fallen away: people want to stand on their own legs. But in this, people's metaphysical need (*The World as Will and Representation*, Vol. 2, Ch. 17) is as ineradicable as any physical need. It becomes serious in the demand for philosophy, and humankind appeals in its need to all the thoughtful minds to whom it has ever given birth. The hollow verbiage and impotent exertions of intellectual eunuchs are no longer enough; rather, it then requires a serious-minded philosophy, i.e., one aiming at the truth, not at stipends and fees, one which does not ask whether it pleases ministers or councillors or whether it suits the interest of this or that contemporary church faction; rather, it is obvious that the business of philosophy [123] is something completely different from providing a means of livelihood for the poor in spirit.[a]

However, I return to my theme. A *theoretical* oracle was associated with the *practical* oracle which Kant had falsely attributed to reason by means of an amplification[b] that simply required some daring. The honour for this discovery is probably traceable to F. H. Jacobi, from which dear man the professors of philosophy joyfully and thankfully accepted this valuable gift. For in this way he helped them out of the straits in which Kant had placed them. Cold, sober, deliberating reason, which Kant had so cruelly criticized, was degraded to *understanding*, and from that point on had to bear that name; the name of reason, however, was assigned to a completely imaginary, or in plain language, a made-up faculty, in which one had something like a little window that opened upon the superlunary, or indeed the supernatural world, a window through which could be received, fully finished and prepared, all the truths that old-fashioned, honest, reflective, and deliberative reason had previously troubled itself with and struggled over in vain for centuries. For fifty years, so-called German philosophy based itself on such a completely fictitious faculty, snatched out of thin air: first as the free construction and projection of the absolute I and its emanations into the not-I; then as the intellectual intuition of absolute identity, or indifference, and its evolutions into nature, or of the origin of God out of his dark ground, or groundlessness, *à la* Jakob Böhme; finally as the pure self-thinking of the absolute idea and the theatre of the ballet of the self-movement of concepts; and all the whites as immediate apprehension of the divine, the supersensible, of holiness, of fineness, truthfulness, goodness – and whatever other 'nesses' may be desirable[c] – or even a mere presentiment, *Ahnen*, (without the d[d]) of all that splendidness. – So that is called reason? Oh, no, these are jokes which are supposed to serve as expedients for philosophy professors who have been embarrassed by Kant's serious *Critiques*, in order somehow, by hook or by crook,[e] to pass off the matters[f] of state religion as the findings of philosophy.

First [124] in the line of dutifulness[a] of all professors of philosophy is to ground philosophically and settle beyond all doubt the doctrine of God as creator and ruler of the world, as a personal, and consequently individual being, endowed with understanding and will, who produced the world out of nothing and guides it with the greatest wisdom, power, and goodness. But this puts philosophy professors in a precarious situation with respect to serious philosophy. That is, *Kant* arrived: the *Critique of Pure Reason* was already written more than sixty years ago, and the result of this has been that all proofs that have been offered over the course of the Christian centuries for the existence of God (which are reducible to only three possible types of proof) are absolutely not able to deliver what is required. Indeed, the impossibility of any such proof, and along with this the impossibility of all speculative theology, are completely proven *a priori*, and indeed, in a way generally understandable – not in a way full of empty verbiage and Hegelian claptrap[b] such that one can make what one wants out of it, as has become the fashion in our day. No, Kant's arguments are quite serious and honest, following venerable practice, so that for sixty years, however awkward it has become for many, no one has been able to raise a cogent objection to Kant's arguments. Moreover, as a result of Kant's arguments, the proofs of the existence of God have been fully discredited and have become useless. Indeed, philosophy professors have looked down on such proofs, even shown a decided contempt for them because the matter is so completely self-evident that it would be ridiculous even to want to demonstrate it. Ai! Ai! Ai! if only this had been known sooner. Then we would not have troubled ourselves for centuries over such proofs, and it would not have been necessary for Kant to crush these with the complete weight of his critique of reason. Such contempt as mentioned above will remind many of the fox with sour grapes. In any case, whoever would like a sample of such proof, will find a quite characteristic one in Schelling's *Philosophical Writings*, Vol. 1, 1809, p. 152.[c] – While others have taken solace in the fact that Kant said that neither can the opposite be proven – as if the old rascal were not aware that 'the proof is incumbent on those who assert the affirmative'[d] – [125] along came Jacobi's amazing discovery like a knight to the rescue of the philosophy professor, granting to this century's German scholars a quite unusual faculty of reason of which no human being had previously heard or known.

And still all these tricks were in no way necessary. For the existence of God itself is not in the least challenged by the impossibility of proving it since it stands on quite certain grounds and unshakeably firm. In fact, it is a matter of revelation, and of course this is much more certain, as the revelation has been solely and exclusively granted to the people who, for that reason, are called the chosen ones. This much is evident: that knowledge of God as the personal ruler and creator of the world who made everything good occurs solely in the Jewish faith and the two doctrines of faith derived from it, which, in a broader sense, can be called its sects, but this knowledge is not to be found in the religions of any other peoples of ancient or modern times. For it would not occur to anyone to confuse the Lord God, say, with the *Brahman* of the Hindus, who lives and suffers in me, in you, in my horse, in your dog – or even the Brahmā who is born and dies to make way for other Brahmās, and moreover, whose production of the world is attributed to sin and guilt[*] – not to mention duped Saturn's voluptuous son, whom Prometheus defies and whose fall he prophesies. But if we consider *the* religion which has the greatest number of followers on earth, and which thus has the majority of humankind as its adherents and in this regard can be called the most eminent – that is, Buddhism – then today we can no longer hide the fact that, just as it is strictly idealistic and ascetic, it is also decidedly and expressly atheistic, so much so that when the doctrine of pure theism is presented to its priests, they expressly reject it. Therefore (as is reported to us in the *Asiatic* [126] *Researches*, Vol. 6, p. 268, similarly by Sangermano in his *Description of the Burmese Empire*, p. 81) in an essay delivered to a Catholic Bishop, the high priest of Buddhists in Ava counted among the six mortal sins the doctrine 'that there is a being who has created the world and all things and is alone worthy of praise and worship'. (See I. J. Schmidt's *Investigations in the Field of the History of Ancient Central-Asian Civilization*, St Petersburg 1824, p. 276.)[a] For just this reason, I. J. Schmidt in St Petersburg (an admirable scholar whom I firmly believe to be the most thoroughly knowledgeable expert on Buddhism in Europe) also said in his paper 'On the Kinship of Gnostic Doctrines with Buddhism',[a] p. 9: 'The writings of the Buddhists lack any positive indication of a supreme being as the principle of creation, and that indication even appears to be assiduously avoided when this subject arises in the course of the discussion.' He says the same in his *Investigations in the Field of the History of Ancient Central-Asian Civilization*, p. 180: 'The system of Buddhism knows no eternal, uncreated, single divine being who always was and created everything visible and invisible. This idea is completely foreign to it and in Buddhist books there is not the least trace of it. Neither is there a creation; the visible universe is not without beginning, although it has *originated* out of empty space consistent with immutable natural laws. It would be an error to assume that something – call it fate or nature – were considered or venerated by the Buddhists as a divine principle; rather, it is the opposite, since precisely this development from empty space, this precipitation out of itself, this partitioning of empty space in innumerable parts, or this matter that now originates, is the evil of *Jirtinschi* or of the universe in its inner and outer relations, from which the *Ortschilang*, or continuous change, has *originated* following immutable laws after these laws were established by this evil'. He says just the same in his lecture held on 15 September 1830 at the St Petersburg Academy,[b] p. 26: 'The expression "creation" is foreign to Buddhism since Buddhism knows only of the formation of the world'; [127] and p. 27: 'It must be understood that in their system cannot be found an idea of any sort of primordial divine creation.' There are hundreds of other similar examples. However, I will only call attention to one, because it is quite popular and, besides, official. That is, the 3rd volume of the very instructive Buddhist work, *The Mahāvasi, Rājā-Ratnācari and the Rājā-Vali, from the Singhalese,*[c] by E. Upham, London, 1833, contains the translation from the Dutch protocols of the individual and successive official interrogations, which, around 1766, the Dutch Governor of Ceylon held with the high priests of the five preeminent pagodas. The contrast between the interlocutors, who could not come to a very good understanding, is most amusing. The priests, filled with love and compassion for all living beings, as is consistent with the doctrine of their religion – even if they should happen to be Dutch Governors – make efforts to be compliant and to provide satisfying answers to all his questions. But the naive and guileless atheism of these pious and even encratistic[a] high priests comes into conflict with the sincere, heart-felt conviction of the Governor, who was already judaicized in the cradle. His faith has become so second nature to him that he cannot even consider that these spiritual men are not theists; therefore, he asks again and again about the supreme being, about who then created the world, and the like. The priests then opine that there could be no higher being than the triumphant Perfect One, the Buddha Sākyamuni, who was born the son of a king, voluntarily lived as a mendicant, and up to his death preached his noble doctrine for the well-being of humankind in order to save us all from the misery of constant rebirth; the world, however, was made by no one;[*] it was self-created;[b] nature expands and contracts, but it is that which, in existing, does not exist; it is the necessary concomitant of rebirth; these are but the consequences of our sinful habits, etc. These conversations continue in this way for about a hundred pages. – I mention this fact primarily because it is really scandalous that still today, in the writings [128] of German scholars, religion and theism have been completely accepted without question as identical and synonymous, while religion relates to theism as *genus* to a individual species, and in fact Judaism and theism are simply identical; therefore, we stigmatize all people who are not Jews, Christians, or Muslims,[c] with the popular term heathens. Muslims and Jews even repudiate Christians for not being pure theists because of the doctrine of the Trinity. For Christianity, whatever might be said, has Indian blood in its veins and thus a constant tendency to rid itself of Judaism. – Kant's critique of reason is the most serious attack that has ever been waged on theism, on account of which philosophy professors have hastened to set it aside, but if it had appeared in Buddhist countries, then, as the citations above suggest, it would have been seen as nothing more than an edifying tract for the most fundamental refutation of heretics against Buddhism and as a beneficial confirmation of the orthodox teaching of idealism, that is, of the doctrine of the merely apparent existence of the world that presents itself to our senses. The two other main religions coexisting with Buddhism in China are just as atheistic: that of Lao-Tzu and that of Confucius; therefore, the missionaries could not even translate the first verse of the Pentateuch into Chinese because the language has absolutely no expressions for God and creation. Even the missionary Gützlaff, in his recently appearing *History of the Chinese Empire*,[a] is so honest as to say, p. 18: 'it is extraordinary that none of the philosophers (in China), who nonetheless possess the full measure of the light of nature, has risen to a recognition of a creator and Lord of the universe.' What J. F. Davis reported is in complete agreement with this (*The Chinese*, ch. 15, p. 156[b]): that Milne, the translator of the *Shing-yu*, says in the introduction to this work that from it can be seen, 'that the bare light of nature, as it is called, even when aided by all the light of pagan philosophy, is totally incapable of leading men to the knowledge and worship of the true God'. All this confirms that the only basis of theism is revelation, as it must be if [129] revelation is not to be superfluous. I take this opportunity to remark that the word 'atheism' contains a surreptitious presupposition insofar as it presumes that theism is self-evident. Instead, one should say: 'non-Judaism', and instead of 'atheist', 'non-Jew'. This would be an honest way of speaking.

Now as I said above, since the existence of God is a matter of revelation and thereby unshakeably established, it requires no human confirmation. But now philosophy is merely the attempt, really superfluous and undertaken in idleness, for once to leave reason (the human faculty to think, to contemplate, reflect) to its own powers – as when someone takes a toddler to a park to loose the apron strings, so that the toddler might try out its powers – in order to see what might result. Such tests and attempts are called speculation, and it lies in the nature of the case that speculation at once overlook and ignore all authority, divine as well as human, and go its own way to seek the highest and most important truths in its own way. Now if, on this basis and ground,[c] its result is none other than those of our great Kant cited above, then for this reason it need not immediately renounce all honesty and conscientiousness, and like a scoundrel, slink by secret paths just to somehow get back to the Jewish basis and ground as the necessary condition[d] of speculation; rather, it must quite honestly and simply track the truth in another way, by such paths as are open to it, but never by following some other light than that of reason; rather, without concern for where it is led, it must go its own way calmly and with confidence, like someone working at their calling.

If our philosophy professors understand this matter different and believe that they cannot eat their bread with honour as long as they have not set the Lord God on the throne (as if he needs them), then from this it is readily explainable why they have not found my works to their taste and why I am certainly not their man; for of course, I cannot serve with their kind, or like them stand in every marketplace, passing on the latest news about dear God.

a *Wahlentscheidung*

b *Ur-Religionen*

c *Identität des Wesens*

a *Begriffe*

b *begreift*

c *Inbegriff*

d *zerlegt*

e *für sich allein*

f *Wenigerdenken*

g *Inbegriff*

h *sublimirten*

i *zersetzen*

a [principle of individuation]

b *des Lächerlichen*

c [*WWR* 1, 84–5 (Hübscher, *SW* 2, 70–1); *WWR* 2, ch. 8 (Hübscher *SW* 3, 99–112)]

d *sermo obliquus*

e *Wissenschaft*

a *abstrahirt*

a *Besonnenheit*

b *sich zu* besinnen

c *Wissenschaften*

d *dictum de omni et nullo* [The logical principle that what is predicated of any whole is predicated of any part of that whole, and what is not predicated of the whole is not predicated of any part of it: supposedly originating in Aristotle's *Prior Analytics* I, 1, 24b26]

e ἄνευ μὲν γὰρ τῶν καθόλου οὐκ ἔστιν ἐπιστήμην λαβεῖν (*absque universalibus enim non datur scientia*) [1086b now found in *Met*. XIII.9]

f *Repräsentanten*

a *Bestimmungen*

b [*An Enquiry Concerning Human Understanding*]

c *Sur l'origine de l'inégalité* [*Discours sur l'origine et les fondements de l'inégalité parmi les hommes* (*Discourse on the Origin and Basis of Inequality among Men*, 1754)]

d [in *Critique of Pure Reason* A137/B176–A147/B187]

e [A142/B181]

f *entre chien et loup*

g *vorstellt*

h *Phantasiebilder*

i *um sich mit diesen auseinanderzusetzen*

***** Whoever takes this to be hyperbolic should consider the fate of Goethe's colour theory; and if he is amazed that I find in this a verification of the point, then he himself has provided another proof

a *quae voce meliora sunt* [*Metamorphoses* XI, 23]

b οὐδέποτε νοεῖ ἄνευ φαντάσματος ἡ ψυχή (*anima sine phantasmate nunquam intelligit*) [*de anima* III, 7, 431a, 16]

c ὅταν θεωρῇ, ἀνάγχη ἅμα φάντασμά τι θεωρεῖν (*qui contemplatur, necesse est, una cum phantasmate contempletur*) [*de anima* III, 8, 432a, 8]

d νοεῖν οὐκ ἔστιν ἄνευ φαντάσματος (*fieri non potest, ut sine phantasmate quidquam intelligatur*) [*de memoria et reminiscentia* ch. 1, p. 449b, 31]

e *De imaginatione*: *Necesse est, eum, qui ratiocinatur et intelligit, phantasmata speculari*

f *De anima*: *oportet intelligentem phantasmata speculari*

a *De compositione imaginum*: *dicit Aristoteles: oportet scire volentem, phantasmata speculari*

b *de immortalitate*

c *Auffassung*

d *ein Momentanes und Einheitliches*

e *Begriffsverhältniß*

f *Satz vom Grunde des Erkennens*

g *eine* Erkenntniß

a κατ᾿ ἐξοχήν

b *Vergleichung*

c *Schluß*

d *das Schließen*

a *innere Wahrheit*

b *innere logische Wahrheit*

c *äußeren logischen Wahrheit*

d *welche das Beruhen auf einem andern Urtheil als Grund wäre*

e *Beziehung*

a [Hübscher, *SW* 3, 55]

b *Metalogicus*

c Joannes Sarisberriensis

d *quia Logicae suscepi patrocinium, Metalogicus inscriptus est liber*

a *die Beziehung…auf*

b *in concreto*

c [Schopenhauer refers to § 32]

d [See ch. 6, § 32; see Hübscher *SW* 1, ‘Anmerkungen zu der Schrift über den “Satz vom Grunde”’, 11]

a *Fähigkeit*

b [perhaps λογικός, ‘belonging to the reason, rational’, is intended here instead of λόγιμον, ‘worth mention’]

c *Erkenntniß*

d *De officiis*

e *ratio et oratio*

f *quae docendo, discendo, communicando, disceptando, judicando, conciliat inter se homines*

g *De natura deorum*

h *rationem dico, et, si placet, pluribus verbis, mentem, consilium, cogitationem, prudentiam*

i *De legibus*

j *ratio, qua una praestamus beluis, per quam conjectura valemus, argumentamur, refellimus, disserimus, conficimus aliquid, concludimus*

k [*WWR* 1, 554–53 (Hübscher *SW* 2, 610–19)]

l [*BM* 148–52 (Hübscher *SW* 4, 146–51)]

a *Vernunft*

b *Verstand*

c *vernünftig*

d *verständig*

e *queer*

f *in majorem Dei gloriam*

a *Unsinnschmierer*

b *Perception*

c *Herrlichkeiten*

d *Wahrnehmungen*

e *Vernunftanschauung des Absolutums, oder auch* ad libitum *des Unendlichen*

f *Evolutionen*

g *vernimmt*

h νεφελοκοκκυγία [Aristophanes *Birds*, 819]

i *Vernunft*

j *Vernehmen*

k [*Ahndung* is archaic for *Ahnung,* presentiment; *Ahndung* can also mean ‘vengeance, punishment’]

l *Schaafsphysiognomie*

m *verschaffen*

a [In lecturing, Hegel pronounced the word in this way in his Swabian accent. See letter to Julius Fräuenstädt, 21 August 1852, *GB* 290]

b *Perioden* [periods]

c [E.g. *WWR* 1, 517–18 (Hübscher *SW* 2, 578–9)]

a *Erkenntniß*

b *Stoff*

c *Materielle*

d *Stoff*

a *Uebersichtlichkeit und Leichtigkeit der Handhabung*

b [*WWR* 1, 545ff. (Hübscher *SW* 2, 610 ff.)]

c [*BM* 151–2 (Hübscher *SW* 4, 149 ff.)]

a *Apparent rari, nantes in gurgite vasto* [Virgil, *Aeneid* I, 118]

a ὄνος πρὸς λύραν [literally ‘an ass before a lyre’]

b [*Essay Concerning Human Understanding*]

c *aller materialen, d.i. Stoff gebenden Erkenntnisse*

a *horribile dictu*

b *ein Paar Pinsel*

c *bon sens*

d *den nächsten Anlaß ... gegeben*

e [*ex tripode.*: the reference is to the tripod seat used by the oracular priestess of Apollo at Delphi]

f [*BM* 148ff. (Hübscher *SW* 4, 146ff.)]

a [A poem by Gottfried August Bürger (1789) about a school-mistress figure; perhaps 'Miss Rule' would be an English equivalent]

b ['On the Foundation of Morals' is the original title of the second of two essays Schopenhauer submitted for contests, both of which were published in 1841 as *The Two Fundamental Problems of Ethics.* In the publication, this essay was slightly revised and re-titled 'Prize Essay on the Basis of Morals']

a *Gesaalbader*

b [Goethe, 'Buch des Unmuts', *West-östlicher Divan,* Stanza 36]

c *Bestialismus* [cf. Hübscher *SW* 3, 529–30 ff.]

a *die Armen am Geiste*

b *Amplification*

c *der Gottheit, der Schönheit, Wahrheit, Gutheit, and was sonst noch für Heiten gefällig sein mögen*

d [*Ahnden,* ‘vengeance, punishment’*,* is also an archaic form of *Ahnen,* ‘presentiment’]

e *per fas aut nefas*

f *Gegenstände*

a *Obliegenheit*

b *Wischiwaschi*

c [Schopenhauer here refers to Schelling's argument, ‘If there *is* a *God*, then he can only exist *because* he is’]

d *affirmanti incumbit probatio*

***** ‘If Brimha be unceasingly employed in the creation of worlds…how can tranquillity be obtained by inferior orders of beings?’ *Prabod'h Chandro’Daya* [*or the Moon of Intellect, an Allegorical Drama*], trans. J. Taylor. [London: Longman, 1812], p. 23. Brahmā is also part of the Trimūrti, the personification of nature as birth, preservation, and death; that is, he represents the first of these

a *Forschungen im Gebiete der älteren* [*religiösen, politischen und litterarischen*] *Bildungsgeschichte* [*der Völker*] *Mittelasiens,* [*vorzüglich der Mongolen und Tibeter*. St Petersburg and Leipzig: Carl Cnobloch, 1824]

a *Über die Verwandtschaft der gnostisch* [*-theosophischen*] *Lehren mit* [*den Religionsystemen des Orients, vorzüglich*] *dem Buddhaismus* [Leipzig: Carl Cnobloch, 1828]

b [*Über einige Grundlehren des Buddhaismus.* 2. Abhandlung. Mémoires de l’Académie Impériale des Sciences à St Pétersbourg. VI. Série. Sciences politiques, Histoire et Philologie. Vol. 1, pp. 222–62. Schopenhauer is referring to a 42-page reprint, without title page, of this lecture]

c [*The Maháwansi; the Rájá-Ratnácari, and the Rájá-Vali, forming the sacred and historical books of Ceylon; also, a collection of tracts illustrative of the doctrine and literature of Buddhism: translated from the Singhalese*]

***** Κόσμον τόνδε, φησὶν ‘Ηράκλειτος, οὔτε τις θεῶν οὔτε ἀνθρώπων ἐποίησεν [‘The cosmos, says Heraclitus, is neither made by some god nor by some human’] *Plut*[*arch*]. *De animae procreatione* ch. 5 [1014A]

a *enkratistischen*

b [Following the German *selbstgeschaffen*, Schopenhauer parenthetically provides the English]

c *Mohammedaner*

a *Geschichte des Chinesischen Reichs* [2 vols., Quedlinburg, 1836]

b [*The Chinese: A general Description of the Empire of China and its Inhabitants*. 2 vols., London: Charles Knight, 1836. The correct citation is p. 164]

c *Grund und Boden*

d *conditio sine qua non*

[130] Sixth Chapter On the third class of objects for the subject and the form of the principle of sufficient reason governing in it

§ 35[103] Explanation of this class of objects

The third class of objects for the faculty of representation constitutes the formal part of complete representations, namely, the intuitions, given *a priori*, of the forms of the outer and inner senses, space and time.

As pure intuitions, they are objects of the faculty of representation by themselves and separate from complete representations and from the determinations of being full or empty which first arise through complete representations. For even pure points and lines absolutely cannot be presented,[a] but can only be intuited *a priori*, just as the infinite extension and infinite divisibility of space and time are objects only of pure intuition and are foreign to empirical intuition. What distinguishes this class of representations, in which space and time are *pure intuitions*, from the first class, in which space and time are *perceived* (indeed, conjointly perceived) is matter; therefore, on the one hand I have explained matter as the perceptibility of space and time, and on the other hand as causality that has become objective.

In [131] contrast, the form of understanding of causality is not by itself and separately an object of the faculty of representation, but first comes to consciousness with and in the material part of cognition.[104]

§ 36[105] Principle of the reason of being

Space and time are so constituted[b] that all of their parts stand in a relation to one another, so each of them determines and is conditioned by another. In space, this relation is called *position*; in time, *succession*. These relations are unique, completely different from all other possible relations of our representations, and therefore, neither the understanding nor reason is capable of grasping them by means of mere concepts; rather, they are intelligible to us simply and solely by means of pure, *a priori* intuition since it cannot be made clear through mere concepts what is above and below, right and left, back and front, what is before and after. Kant[a] quite correctly confirms this by explaining that the distinction between the right and left glove absolutely cannot be made intelligible any other way than by means of intuition.[106] Now I call the law according to which the parts of space and time determine one another with regard to these relations the *principle of sufficient reason of being*, *principium rationis sufficientis essendi*. An example of this relation, already given in the 15th section, the connection between the sides and angles of a triangle, itself shows that this relation is completely different both from that between cause and effect and from that between cognitive ground and consequence, which is why the condition may be called reason of *being*, *ratio essendi*. It goes without saying that insight into such a *ground of being*[b] can become a ground of knowledge,[c] just as an insight into the law of causality and its application in a specific case is a ground of knowledge of the effect; however, this in no way annuls the complete difference between the ground of being, of becoming, and of knowing. In many cases, that which is a *consequence* according to *one* form [132] of our principle, is a ground according to another; hence, the effect is very often the ground of knowledge of the cause. E.g. the thermometer's rising, is, according to the law of causality, a *consequence* of increased heat; whereas, according to the principle of reason of knowing, a thermometer's rising is a *ground*, a ground of knowledge of increased heat, as well as the judgement which this expresses.[107]

§ 37[108] Ground of being in space

The position of any part of space, say, of one given line (the same applies to areas, bodies, points) relative to any second line and its completely different position relative to any possible other line, is thoroughly determined, so that one position stands to the other in the relation of consequence to ground. Since the position of a line relative to the position of any other possible line determines its position relative to all other lines, including that just referred to as determined in relation to the other, it does not matter which is considered to be determined first and which is considered to be determining the other; i.e. it does not matter which is considered to be the ground[a] on which others are based.[b] This is so because there is no succession in space; indeed, the representation of simultaneity[c] arises just because the totality of representations of the complex of experience is formed through the union of space with time. Thus with the ground of being in space, an analogue of the so-called reciprocal action[d] prevails everywhere, about which I will give details on considering reciprocity of grounds in § 48. Now because the position of any line is determined by all others just as they are determined by it, it is just a matter of choice if a line is considered merely as determining others and not as determined, and the position of any line relative to any other line allows the question of its position relative to a third, and by means of the second position the first is necessarily as it is. Therefore in the concatenation of grounds of being, as in the grounds of becoming, there is absolutely no end to be found in what comes before,[e] and on account of the infinity of space and of the lines in it, there is also none in what follows after.[f] All possible relative spaces are figures because they are bounded, and all these figures have [133] their ground of being in one another because of their common boundaries. The series of grounds of being[g] in space, like the series of grounds of becoming,[h] proceed infinitely,[i] and indeed not only in one directions, but in all directions.

A proof of all this is impossible, for these are propositions whose truth is transcendental,[109] since they have their ground immediately in the intuition of space, which is given *a priori*.

§ 38[110] Ground of being in time. Arithmetic

In time each moment is conditioned by the previous moment. Here the ground of being, as the law of sequence,[j] is so simple because time has only one dimension, and thus there can be in time no multiplicity of relations. Every moment is conditioned by the previous one: only through the first can one reach the second; only insofar as the first *was*, has flown by, can the second *be*. This nexus of the parts of time is the basis of all counting, the words of which only serve to mark the individual steps of succession; hence, all of arithmetic teaches absolutely nothing but methodical abbreviations of counting.[111] Every number presupposes the previous one as ground of its being: I can only reach 10 through all previous numbers, and solely by means of this insight into the ground of being, I know that where there are 10, there are also 8, 6, and 4.

§ 39[112] Geometry

In just the same way, all of geometry depends on the nexus of the positions of the parts of space. Consequently, geometry would be an insight[a] into this nexus, but as was said above, such an insight is not possible through mere concepts,[113] but only through intuition, so every geometrical proposition would have to be reduced to this intuition, and the proof would merely consist in clearly bringing out the nexus whose intuition is at issue; nothing more could be done. However, we find the treatment of geometry [134] to be completely different. Only Euclid's twelve axioms rest on mere intuition, and even among these really only the ninth, eleventh, and twelfth rest on separate and distinct intuitions. All the others rest on the insight that in science, unlike in experience, one is not concerned with real things,[114] infinitely different, existing separately, and adjoining one another, but one is concerned with concepts. The others also rest on the insight that in mathematics one is concerned with *normal intuitions*,[b] i.e., figures and numbers whose laws are binding for all experience and which thus combine the comprehensiveness of a concept with the complete determinacy of a particular representation. For although normal intuitions, like intuitive representations, are completely determinate (and *as such* are not general because they exclude indeterminacy), they are nonetheless general because they are the mere forms of all appearances and as such apply to all real objects to which such forms belong. Therefore what Plato said about his Ideas would apply to these normal intuitions, even in geometry, as well as to concepts: namely, that no two which are exactly alike can exist, for then they would only be one.[*] I say that this would also apply to normal intuitions in geometry, were they not, like objects that are only *spatial*, distinguished by simple *juxtaposition*, by *locus*.[a] According to Aristotle, Plato already made this observation: ‘Moreover, besides that which is sensible and Ideas, he says there are mathematical things that are intermediate, different from that which is sensible in being eternal and inalterable, different from Ideas in being many alike, while each Idea itself is unique',[b] [135] *Metaphysics* I, 6, with which compare X, 1.[115] Now the simple view that such a difference of place does not abolish the rest of identity could, it seems to me, replace those nine axioms, and for the essence of science, the purpose of which is to know the particular from the universal, this view would be more suitable than the statement of nine different axioms that all rest on a single view. So then what Aristotle says, *Metaphysics* X, 3, would apply to geometric figures: 'equality is unity in all of these'.[c]

However, for normal intuitions in time, that is numbers, there is no such difference as juxtaposition, but simply, as for concepts, the identity of indiscernibles,[d] and there is only one five and one seven. Here too can be found the reason why the proposition 7 + 5 = 12 is not, as Herder opined in his *Metacritique*,[e] one of identity, but as Kant has so profoundly discovered, is a synthetic *a priori* proposition,[f] based on pure intuition. 12 = 12 is a proposition of identity.

Thus in geometry, only in the case of axioms is appeal actually made to intuition. All remaining theorems are demonstrated, i.e., a ground of knowledge of the theorem is specified, which compels one to accept them as true; thus, the logical truth, not the transcendental truth of the theorem, is demonstrated.[116] (§§ 30 and 32.) But this, which lies in the ground of being and not in that of knowing,[117] is never evident except by means of intuition. Therefore upon a geometric demonstration of this kind one indeed has the conviction that the demonstrated proposition is true, but in no way does one see why what the proposition asserts is as it is; i.e. one does not possess the ground of being, but usually by this point the demand for it has arisen. For proof through demonstration of the ground of knowledge produces mere conviction (*convictio*), not insight (*cognitio*): perhaps for this reason it would be more correct to call this refutation rather than demonstration.[a] Therefore a demonstration of this kind usually leaves behind an unpleasant feeling, as is generally the case with a marked lack of insight, and here the lack of knowledge of *why* something is so is first felt through a given certainty *that* it is so. In this case, the feeling is similar to that which is produced when someone [136] pulls a rabbit out of a hat and we cannot understand how the trick works. As occurs in such demonstrations, the ground of knowledge without ground of being is analogous to many theories of physics, which explain a phenomenon without being able to indicate the cause as, e.g., the Leidenfrost experiment, insofar as it works in a platinum crucible.[118] In contrast, the ground of being of a geometric proposition recognized through intuition gives satisfaction as does any acquired knowledge. If one has the ground of being, the conviction of the truth of the proposition is supported on it alone, and no longer on the ground of knowing given by demonstration. E.g. *Euclid* demonstrates the 6th proposition in his first book, 'if two angles of a triangle are equal, then their opposite sides are equal', in this way: let the triangle be *a b g,* in which the angle *a b g* is equal to the angle *a g b*; then I assert that the side *a g* is also equal to the side *a b* (see Fig. 3).

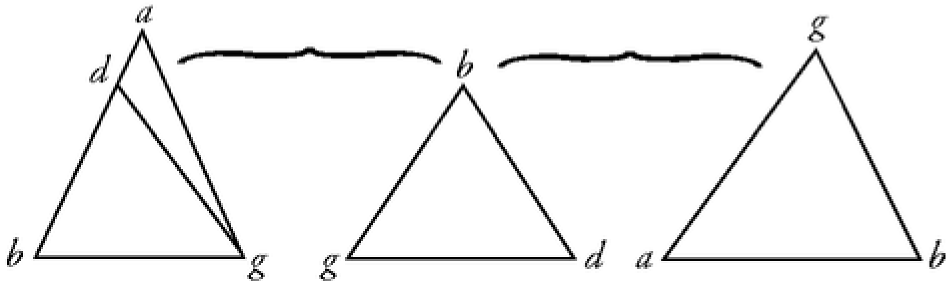

Figure 3

For if side *a g* is unequal to side *a b*, then one of them is greater. Let *a b* be greater. Remove from the greater side, *a b,* a segment *d b*, equal to the smaller *a g*, and draw the line *d g*. Now since (in the triangles *d b g*, *a b g*) *d b* is equal to *a g*, and *b g* is common to both, then the two sides *d b* and *b g* are equal to the two sides *a g* and *g b*, respectively, and the angle *d b g* is equal to the angle *a g b;* the base line *d g* is equal to the base line *a b*; and the triangle *a b g* is equal to the triangle *d g b*; the greater is equal to the smaller – which is absurd. Thus *a b* is not unequal to *a g*; consequently, it is equal.

In this proof we now have a ground of knowledge of the truth of the theorem. But who bases[a] his conviction of this geometric truth on this proof? Instead, one's conviction is based on the ground of being, known by intuition, according to which (through a necessity that no longer admits of being demonstrated, but only of being intuited) if from both end points of a line, two other end points incline equally toward one another, they can only meet at one point equidistant from both end points because the two angles thereby arising actually are only one, appearing to be two merely because of their opposing positions, so there is no ground [137] for the lines' meeting closer to one than to the other point.

Through cognition[b] of the ground of being, one sees the necessary consequence of the conditioned from its condition; in this case, the equality of the sides from the equality of the angles (that is, their connection); however, through the ground of knowing, one understands only the coexistence of both. Indeed, it can even be asserted that by the usual method of proofs one will actually be convinced only that both figures in the present example coexist, but not that they always coexist, which truth (since the necessary connection has in fact not been shown) one obtains here through a conviction merely grounded in induction, a conviction which rests on the fact that one finds it so with every figure one draws. Of course only with such simple theorems as Euclid's 6th is the ground of being so obvious. Still I am convinced that it must be possible to show the ground of being for any theorem, even the most complicated, and the certainty of the proposition must be reducible to such a simple intuition. Also, anyone is *a priori* conscious of the necessity for such a ground of being for any spatial relation as much as anyone is *a priori* conscious of the necessity for the cause of any alteration. Certainly in complicated theorems it must be very difficult to give the ground of being, and here is not the place for difficult geometric investigations. Therefore, just to make even clearer what I mean, I will seek to reduce a slightly more complicated proposition to its ground of being, where that ground is not so immediately obvious. I skip over ten theorems to the sixteenth. 'In every triangle of which one side has been produced, the exterior angle is greater than either of the interior opposite angles.' Euclid's proof is as follows (see Fig. 4).

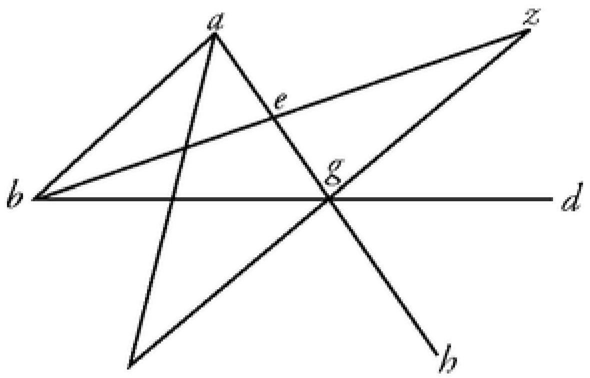

Figure 4

Let the triangle be *a b g*, and let side *b g* be produced to *d*, and I assert that the exterior angle *a g d* is greater than either of the opposite interior angles. – Bisect the side *a g* at *e* and draw *b e*, and then produce it to *z* such that *e z* is equal to *e b*. Join *z g* and produce *a g* to *h*. – Now since *a e* is equal to *e g*, and *b e* is equal to *e z*, the two sides *a e* and *e b* are equal to the two sides *g e* and *e z*, respectively, and the angle *a e b* is equal to the angle *z e g*, for they are [138] vertical and opposite angles. Hence the base line *a b* is equal to the base line *z g*, and the triangle *a b e* is equal to the triangle *z e g*, and the remaining angles are equal to the remaining angles; consequently, the angle *b a e* is equal to the angle *e g z*. But the angle *e g d* is greater than *e g z*; consequently, the angle *a g d* is also greater than the angle *b a e*. – Also bisect *b g*, and in a similar way it will be proved that the angle *b g h*, i.e., the vertical and opposite angle *a g d* is greater than *a b g*.

I would prove the same proposition in the following way (see Fig. 5).

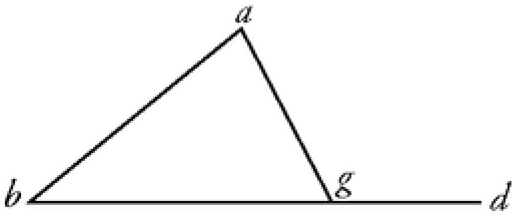

Figure 5

For angle *b a g* to be equal to (let alone greater than) angle *a g d*, line *b a* would have to lie in the same direction relative to *a g* as *b d* (this is just what is called equality of angles); i.e. be parallel to *b d*; i.e. it could never meet *b d*. However, if a triangle is to be formed, it must (ground of being) meet *b d* and so the opposite of what would be required for angle *b a g* even to be the same size as *a g d*.

For angle *a b g* to be equal to (let alone greater than) angle *a g d*, line *b a* would have to lie in the same direction relative to *b d* as *a g* (this is just what is called equality of angles); i.e. be parallel to *a g*; i.e. it could never meet *a g*. However, if a triangle is to be formed, it must meet *a g* and so do the opposite of what would be required for angle *a b g* even to be the same size as *a g d*.

Through all of this I have in no way proposed a new method of mathematical demonstration, no more than my proof will take the place of Euclid's; for by its whole nature and because it presupposes the concept of parallel lines (which come later in Euclid) my proof is unsuitable as a new method; rather, I have only wanted to show what the ground of being is and how it is different from the ground of knowing, since the latter merely produces conviction,[a] which is something completely different from insight into the ground of being. But the fact that in geometry one strives to produce only conviction (which, as was said, leaves a sense of dissatisfaction) but not insight into the ground of being[b] (which like any insight, satisfies and delights) may be one reason[c], among others, why many otherwise brilliant minds have an aversion to mathematics.

[139] However, I cannot refrain from again providing a figure which has already been given in other places[d] (Fig. 6), the mere appearance of which, without further discussion provides twenty times the conviction of the truth of the Pythagorean theorem than Euclid's mousetrap proof. The reader interested in this chapter may find the subject discussed further in *The World as Will and Representation*, Vol. 1, § 15 and Vol. 2, ch. 13.[119]

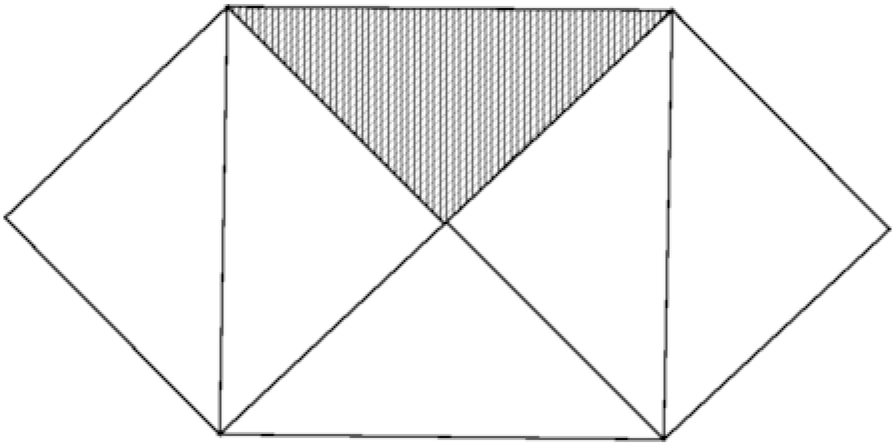

Figure 6

a *dargestellt*

b *haben die Beschaffenheit*

a [*Prolegomena to any Future Metaphysics*, Ak. 4: 286]

b *Seynsgrund*

c *Erkenntnißgrund*

a *ratio*

b *rationata*

c *Zugleichseyns*

d *Wechselwirkung*

e *a parte ante*

f *a parte post*

g *series rationum essendi*

h *series rationum fiendi*

i *in infinitum*

j *Folge*

a *Einsicht*

b *Normalanschauungen*

***** Perhaps *Platonic* Ideas can be described as normal intuitions [*Normalanschauungen*], which, unlike mathematical intuitions, would not only be valid for the formal aspect of complete representations, but also for the material aspect; thus, they would be complete representations that as such would be thoroughly determinate, and at the same time, like concepts, would concern many things; i.e. according to the explanation given in § 28, they would be representatives of concepts, completely adequate as such

a *Ort*

b ἔτι δέ, παρὰ τὰ αἰσθητὰ καὶ τὰ εἴδη, τὰ μαθηματικὰ τῶν πραγμάτων εἶναί φησι μεταξύ, διαφέροντα τῶν μὲν αἰσθητῶν τῷ ἀΐδια καὶ ἀκίνητα εἶναι, τῶν δὲ εἰδῶν τῷ τὰ μὲν πολλ᾽ ἄττα ὅμοια εἶναι, τὸ δὲ εἶδος αὐτὸ ἓν ἕκαστον μόνον (*item, praeter sensibilia et species, mathematica rerum ait media esse, a sensibilibus quidem differentia eo, quod perpetua et immobilia sunt, a speciebus vero eo, quod illorum quidem multa quaedam similia sunt, species vero ipsa unaquaeque sola*) [987b, 14ff. To maintain consistency with Schopenhauer's use of *Idee* we translate τό εἶδος as ‘Idea’ instead of ‘Form’]

c ἐν τούτοις ἡ ἰσότης ἑνότης (*in illis aequalitas unitas est*) [1054b, 3]

d *identitas indiscernibilium* [see Leibniz, *New Essays Concerning Human Understanding*, ch. 27, secs. 1 and 3]

e [*Verstand und Erfahrung: Eine Metakritik zur Kritik der reinen Vernunft*. Pt. I. Leipzig: Johann Friedrich Hartknoch, 1799, p. 31]

f *synthetischer Satz* a priori

a *elenchus…demonstratio*

a *gründet*

b *Erkenntniß*

a *convictio*

b *Grund des Seyns*

c *Grund*

d [*WWR* 1, 98 (Hübscher *SW* 3, 86ff.)]

[140] Seventh Chapter On the fourth class of objects for the subject and the form of the principle of sufficient reason governing in it

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§ 40[120] General explanation

The last class of objects of the faculty of representation still remaining for our consideration is one quite special, but very important: for everyone it[121] is comprised of only *one* object, namely the immediate object of the inner sense, *the subject of willing*,[122] which is object for the cognizing subject and indeed is given only to the inner sense; thus, it appears only in time, not in space, and even there, as we will see, with a significant qualification.

§ 41[123] Subject of cognition and object

Any cognition necessarily[a] presupposes subject and object. Thus even self-consciousness is not absolutely simple, but just like the consciousness of other things (i.e. the faculty of intuition), it divides into that which is cognized and that which cognizes. Here what is cognized appears absolutely and exclusively as will.

Therefore [141] the subject cognizes itself only as *something that wills*,[b] but not as *something that cognizes*.[c] For the I that represents,[d] the subject of cognition, can never itself become a representation or object, since, as the necessary correlate of all representations, it is their condition; however, the beautiful passage of the sacred Upanishad applies to it: ‘that which sees all is not to be seen; that which hears all is not to be heard; that which knows all is not to be known; that which discerns all is not to be discerned. Beyond it, seeing, and knowing, and hearing, discerning, there is nothing.’[a] – *Oupnek'hat*, Vol. I, p. 202 – [124]

Therefore there is no *cognition of the cognizing* because it would require that the subject separate itself from cognizing and yet cognize the cognizing, which is impossible.

To the objection, 'I not only cognize,[b] but I also know[c] that I cognize' I would answer: your knowing[d] of your cognizing[e] is different from your cognizing only in its being expressed. 'I know that I cognize', says nothing more than 'I cognize', and then, without anything further, this says nothing more than 'I'. If your cognizing and your knowing of this cognizing are two different things, then try just once to have either by itself alone: first to cognize[f] without knowing[g] about it, and then again, to know simply of cognizing without this knowing being at the same time cognizing. Of course, one can abstract from any *particular* cognition and so arrive at the proposition 'I cognize', which for us is the ultimate possible abstraction, but identical with the proposition 'for me, there are objects' and this is identical with 'I am subject', which contains nothing more than merely 'I'.

Now if the subject cannot be cognized, it could be asked how its various powers of cognition (sensibility, understanding, reason) can be recognized.[h] – We do not recognize these because cognizing has become an object for us; otherwise, there would not be so many contradictory judgements about them; rather, they are inferred, or, put more correctly, they are common expressions for the established classes of representations, which at all times are more or less precisely distinguished in those very powers of cognition. But with regard to the subject (as the necessary correlate and condition of those [142] representations), these cognitive powers are abstracted from those representations, and, consequently, they are related to the classes of representations just as the subject in general is related to the object in general. Just as with the subject the object is also immediately assumed (since otherwise the word is even without meaning), and in the same way the subject is also immediately assumed with the object, so that being the subject means exactly the same as having an object, and being the object means exactly the same as being cognized by the subject; so now, in exactly the same way for an object *determined in some way*, the subject is also immediately assumed to be *cognizing in just that way*. Insofar as it is a matter of indifference whether I say that objects have such and such determinations inherent in and specific to them or that the subject cognizes in such and such ways, it is all the same whether I say that the objects are divisible into such and such classes or that such and such different powers of cognition are specific to the subject. Also, traces of this insight are to be found in that amazing mix of profundity and superficiality – in Aristotle – as one can often find in him already the seed of critical philosophy. In *On the Soul*[a] III, 8, he says: ‘the soul is in a way everything that exists’[b]; and next: ὁ νοῦς ἔστι εἶδος εἰδῶν, i.e., understanding is the form of forms, καὶ ἥ αἴσθησις εἶδος αἰσθητῶν, and sensibility the form of objects of the senses.[c] Now as a result, whether one says that sensibility and understanding no longer exist or that the world has ended – is all the same. Whether one says that there are no concepts or that reason is gone and now there are but animals – is all the same.

Failure to recognize this relation gave rise to the controversy between realism and idealism, ultimately appearing as the dispute between the old dogmatism and the Kantians, or between ontology and metaphysics and the transcendental aesthetic and the transcendental logic.[d] This dispute rests on the failure to recognize this relation when considering the first and third classes of representations I have advanced, just as the controversy between the realists and the nominalists in the middle ages resulted from the failure to recognize this relation when considering the second of our classes of representation.[125]

[143] § 42[126] Subject of willing

As explained above, the subject of cognition can never be cognized, never be an object, a representation. Nonetheless, since we have not only an outer cognition (in sensory intuition), but also an inner cognition of ourselves, and since every kind of cognition presupposes by its very nature something that is cognized and something that cognizes, what is cognized in us as such is not something that cognizes, but something that wills, the subject of willing, will. Beginning with cognition, one can say that[127] ‘I cognize’ is an *analytic* proposition; in contrast, ‘I will’ is *synthetic* and, indeed, *a posteriori*; for it is given through experience, here through inner experience (i.e. only in time).[128] To that extent, the subject of willing would be an object for us. If we introspect,[a] we find ourselves always as *willing*. However, willing has many degrees, from the mildest wish up to passion, and I have often explained (e.g. in *The Two Fundamental Problems of Ethics*, p. 11[b] and elsewhere) that not only all affects, but also all of the inner movements subsumed under the broad concept of feeling, are states of will.[129]

But now the identity of the subject of willing with the cognizing subject, by means of which (and, indeed, necessarily), the word 'I' includes and indicates both, is the knot of the world[c] and therefore inexplicable.[130] For to us, only relations among objects are conceivable; among these, however, two can be one only insofar as they are part of a whole. In contrast, here, when speaking of the subject, the rules for cognition of objects no longer apply, and an actual identity of the cognizer with that which is cognized as willing, thus of the subject with the object, is *immediately given*. But whoever truly realizes the inexplicability of this identity will with me call it the miracle *par excellence*.[d]

Now just as the subjective correlate of the first class of representations is understanding, that of the second is reason, and that of the third pure sensibility, so that of the fourth is found to be the inner sense, or self-consciousness in general.[131]

[144] § 43[132] Willing. Law of motivation

Precisely because the subject of willing[e] is immediately given in self-consciousness, what willing[f] is cannot be further defined or described; moreover, it is the most immediate of all of our cognitions, and indeed, the fact that it is immediate must ultimately cast light on all remaining cognitions, which are mediated.

With every observed decision of others, as well as our own, we regard ourselves as justified in asking, 'Why?'; i.e. we presume it to be necessary that there was something preceding it, from which it followed, which we call the ground, or more precisely, the motive for the action now resulting.[133] It is as inconceivable that there can be an action without a motive as that there can be movement of an inanimate body without a push or pull. As a result, motive is included among the causes and has already been counted and characterized among these as the third form of causality (§ 20). But all causality is only the form of the principle of reason in the first class of objects, thus in the physical world given in outer intuition. In the physical world alterations are bound together, since the cause is the condition, coming from without, of any event. In contrast the interior of such events remains a secret to us, since we always remain on the outside. In the physical world, we do see[a] this cause necessarily produce its effect, but we do not experience how it actually is able to do so, or what goes on inside. Thus we see mechanical, physical, chemical effects, and also those of stimuli, following their respective causes every time, without understanding the event through and through; rather, what is essential remains a mystery to us, so we then attribute it to properties of bodies, natural forces, even the vital force, which, however, are merely occult qualities.[b] It would be no better with our understanding of the movements and actions of animals and humans, and we would also see these evoked in an inexplicable way through their causes (motives) if insight into the interior of the event were not open to us; from our inner experience we know[c] [145] that the event is an act of will,[d] evoked by a motive that consists of a mere representation. Thus we recognize[e] the influence of the motive, like all other causes, not only from the outside, and hence only mediately, but we simultaneously recognize it from the inside, quite immediately, and therefore in accordance with its entire way of acting. Here we stand behind the scenes, as it were, and experience the secret of how, in accordance with its innermost nature, the cause produces the effect, for here we cognize by a completely different means,[f] and thus in a completely different manner.[g] The result of this is the important proposition: *motivation is causality seen from within*. Causality thus presents itself here in a completely different way, in a completely different medium, for a completely different type of cognition; and so it must be presented as a special and particular form of our principle, which thus appears here as the *principle of sufficient reason of acting*, *principium rationis sufficientis agendi*, or more briefly put, the *law of motivation*.[134]

From a different perspective, with reference to my philosophy in general, I add here that the law of motivation is related to the law of causality given in § 20 above, so this fourth class of objects for the subject, and thus that of the will, which is perceived[a] in ourselves, is related to the first class. This insight is the cornerstone of my whole metaphysics.

For a detailed discussion of the manner and the necessity of motives' effects, their being conditioned through the empirical, individual character, as well as through the individual's cognitive capacity, etc., I refer to my ‘Prize Essay on the Freedom of the Will’.[b]

§ 44[135] Influence of will on cognition

The influence that will exercises on cognition is not based on causality, strictly speaking, but on the identity of the cognizing with the willing subject (discussed in § 42) since the will compels cognition to repeat representations that have once been present to the cognizing subject, generally directing attention to this or that, and evoking any series of thoughts it [146] prefers.[136] In this too the will is determined by the law of motivation, according to which the will is the secret director of the so-called association of ideas. In the second volume of *The World as Will and Representation* I have devoted a specific chapter (the 14th) to this, which itself is nothing other than the application of the principle of reason in its four forms to the subjective train of thought and, thus to the presence of representations in consciousness. But the individual's will is what sets the whole mechanism in action:[c] in line with the person's interests, i.e., their individual ends, it drives the intellect to produce in addition to its present representations others that are intimately related logically, or analogically, or through spatial or temporal proximity. In this the action of the will is so immediate, however, that for the most part we are not clearly aware of it, and so quick that sometimes we are not aware of the occasion for a representation thus evoked, so that it then appears to us as if it has come to our consciousness without any connection to anything else; but that this could not have happened, as I said above, is precisely the root of the principle of sufficient reason,[137] as is carefully explained in the chapter cited above. Any image that is suddenly presented in our imagination, and any judgement that does not follow from a ground that was previously present, must be evoked through an act of will that has a motive, although the motive (because it is trifling) and the act of will (because its satisfaction is so easy that it is simultaneous with the act of will) are frequently not perceived.[138]

§ 45[139] Memory

The characteristic of the knowing subject, that in making representations present it obeys the will more easily the more often such representations have already been present to it (i.e. its *capacity to function as a result of practice*)[a] is *memory.* I cannot agree with the usual description of memory as a warehouse in which we store a stock of finished representations that we would subsequently always have, but without our always being aware of them. Through practice, arbitrary [147] repetition of representations which have once been present to us becomes so easy that as soon as a member of a series of representations has become present to us, we immediately call up the remainder, often even apparently against our will. If one wants an image for this characteristic of our faculty of representations (just as Plato provides one as he compares memory with a soft mass that receives and retains impressions[b]), the most accurate appears to me to be that of a cloth, which if often folded in a certain way, thereafter takes the same shape. Just as the body learns to obey the will through practice, it is the same with the faculty of representation. It is not at all as the usual description takes it: a recollection of a representation, always the same, again and again fetched from its warehouse; rather, a new mental image actually arises each time, but through practice with a special ease. Therefore, it occurs that mental images (which we believe have been stored in memory, but which we actually only practise through frequent repetition) are changed imperceptibly, and we become aware of this change if after a long time we again see an old, familiar object, and it does not completely correspond to the image that we associate with it.[c] This could not occur if we stored completely finished representations. For just this reason, all acquired knowledge gradually disappears from our memory if we do not use it, precisely because it comes only from custom and skill developed through exercise and so, e.g., most scholars forget their Greek and, on returning home, most artists forget their Italian. In any case this explains why, if we once knew well a name, a verse, or the like, but have not thought about it in many years, it is difficult to recall, but once this recall is accomplished, we have it at our disposal for several years because now the practice is renewed. Therefore, whoever understands several languages should from time to time read something in those languages, by which means he will retain possession of them.[140]

This also explains why the surroundings and events of our childhood so deeply impress themselves on our memory; it is because as children we have only a few, primarily intuitive representations, and therefore, to be occupied, we constantly repeat them. It is the case among people who have little capacity for original [148] thought that this goes on throughout their entire lives (and indeed not only with intuitive representations, but also with concepts and words); thus, such people sometimes have a very good memory, if it is not hindered by obtuseness and dull intellect. In contrast the genius sometimes does not have an excellent memory, such as Rousseau said of himself: this can be explained in that a genius does not have time for much repetition because of the great number of original thoughts and syntheses[a] – although it would not be easy to find a genius with a completely bad memory because energetic and flexible powers of thought make up for constant practice. And we do not want to forget that Mnemosyne is the mother of the muses. Therefore, one can say that memory is subject to two mutually antagonistic influences: on the one hand that of the energy of the faculty of representation, and on the other hand that of the number of representations that busy this faculty. The less the first factor, the less must the other be also in order for there to be a good memory, and the greater the second, the greater too must be the other.[141] This also explains why people who incessantly read novels thereby lose their memory, because for them, just as for the genius the number of representations (which in this case are not their own thoughts and syntheses, but are another's) quickly pass in succession, allowing them neither time nor patience for repetition and practice, and they do not have what compensates the genius for lack of practice. Moreover, the whole thing is still subject to the corrective that people have the best memory for what interests them, the worst for all that remains. Thus many great minds forget the petty affairs and events of everyday life, and likewise, with unbelievable speed, they forget insignificant people to whom they have been introduced, while people of limited intellect retain everything admirably. Nonetheless, geniuses will have a good, even a stupendous memory for what is important for *them* and for what is significant in itself.[142]

But in general it is easy to see that we best retain such series of representations as are coherent, connected by the bond of one or more of the species of the aforementioned grounds and consequences, but it is more difficult to retain that which is not [149] coherent, and which only connects through our will according to the law of motivation, i.e. that which is put together arbitrarily. That is, with the former, we are spared half the trouble by the forms known to us *a priori*; this, like all *a priori* cognition in general, also probably gave rise to Plato's theory that all learning is only recollection.[143]

a *unumgänglich*

b *ein Wollendes*

c *ein Erkennendes*

d *das vorstellende Ich*

a *Id videndum non est: omnia videt; et id audiendum non est: omnia audit; sciendum non est: omnia scit; et intelligendum non est: omnia intelligit. Praeter id, videns, et sciens, et audiens, et intelligens ens aliud non est.* [Anquetil-Duperron, Abraham Hyacinthe (trans.). *Oupnek'hat (id est, secretum tegendum…)*, 2 vols. Argentorati: Levrault, 1801]

b *erkenne*

c *weiß*

d *Wissen*

e *Erkennen*

f *erkennen*

g *wissen*

h *bekannt*

a *De anima*

b ἡ ψυχὴ τὰ ὄντα πώς ἐστι πάντα (*anima quodammodo est universa, quae sunt*) [431b, 21]

c [432a, 2]

d [Schopenhauer refers to the first and second parts of the ‘Transcendental doctrine of elements’ in Kant's *Critique of Pure Reason*]

a *in unser Inneres blicken*

b [*FW*, 38–9 (Hübscher *SW* 4, 11ff.)]

c *Weltknoten*

d *das Wunder* κατ᾽ ἐξοχήν

e *Subjekt des Wollens*

f *Wollen*

a *sehn*

b *qualitates occultae*

c *wissen*

d *Willensakt*

e *erkannt*

f *auf einem ganz anderen Wege*

g *Art*

a *wahrgenommene*

b [*FW*, 54–7 (Hübscher *SW* 4, 31–5)]

c *das ganze Getriebe in Thätigkeit versetzt*

a *Uebungsfähigkeit*

b [See *Theaetetus*, 190e–196c]

c *mitbringen*

a *Kombinationen*

[150] Eighth Chapter General remarks and results[144]

§ 46[145] The systematic order

The sequence in which I have presented the different forms[146] of our principle is not a systematic presentation, but merely chosen for clarity, putting first that which is better known and that which at least presupposes the rest, according to Aristotle's rule ‘In learning, begin not with that which is first, and which is the beginning of the matter, but first learn that which is easiest’ *Metaphysics* IV, 1.[a,147] But this is the systematic order which the classes of the grounds must follow. First the principle of the reason of being must be cited, and, here again, first in its application to *time*, the simple scheme of all the remaining forms of the principle of sufficient reason, containing only what is essential, the prototype[b] of all finiteness. Then, after the statement of the ground of being in space, the law of causality must be stated; after this the law of motivation follows; and finally the principle of sufficient reason of knowing will be stated, since the others refer to immediate representations, but this last refers to representations of representations.

The [151] truth expressed here, that time is the simple scheme, containing only what is essential to all forms of the principle of reason, explains the absolutely perfect clarity and accuracy of arithmetic, to which the clarity and accuracy of no other science can be compared. That is, all sciences are based on the principle of reason, since without exception they are connections of grounds and consequences. But now the series of numbers is the simple and sole series of the ground of being and consequence in time. Because of this perfect simplicity, since it excludes nothing, nor are there anywhere indeterminate relations, it leaves nothing to be desired in clarity, accuracy, and apodictic certainty. In these qualities, all other sciences are inferior, even geometry, because so many relations arise from the three dimensions of space that a survey of it becomes too difficult for pure intuition, as well as for empirical intuition. For this reason, complicated problems of geometry are solved only through calculation, and thus geometry quickly resolves into arithmetic. I need not show that the remaining sciences contain all sorts of obscure elements.[148]

§ 47[149] Temporal relation between ground and consequent

According to the laws of causality and motivation, the ground must precede the consequent in time. This is absolutely essential, as I have demonstrated in detail in the 2nd volume of my principal work, ch. 4, pp. 41–2[a] to which I refer here so as not to repeat myself. Accordingly, one will not be misled by the example Kant cites (*Critique of Pure Reason*, 1st edn, p. 202; 5th edn, p. 248[b]),[150] namely, that the cause of the warmth in a room, the stove, is simultaneous with its effect – as long as one considers that a thing is not the cause of another thing, but a state is the cause of another state. The state of the stove, that it has a higher temperature than the surroundings,[c] must precede the imparting of the excess heat to its surroundings; and now, since any heated layer of air is displaced by any colder layer of air streaming in, the first state, the [152] cause, and, as a result, the second state, the effect, are renewed as long as the stove and the room are not of the same temperature. Thus here the stove and the warmth of the room are not persistent, simultaneous cause and effect, but a chain of alterations,[151] or a continual renewal of the two states, one being the effect of the other. But from this example we can see how even Kant's concept of causality was unclear.[152]

In contrast, the principle of sufficient reason of knowing does not entail any temporal relation, but only a relation for our reason: thus, *before* and *after* are here without meaning.

With the principle of reason of being, so far as it is valid in geometry, there is likewise no temporal relation, but only a spatial one, of which it may be said that everything is simultaneous, if here simultaneity as well as succession were to have any meaning. Conversely, in arithmetic, the ground of being is nothing other than the temporal relation itself.

§ 48[153] Reciprocity of grounds

In any of its meanings, the principle of sufficient reason can establish a hypothetical judgement, just as any hypothetical judgement ultimately is based on it,[154] and the laws of hypothetical inferences thus always remain valid, that is, it is valid to infer from the existence[a] of a ground to the existence of a consequent, or from the non-existence[b] of the consequent to the non-existence of the ground; but it is invalid to infer from the non-existence of the ground to the non-existence of the consequent and from the existence of the consequent to the existence of the ground. Nonetheless, it is noteworthy that in geometry, the existence of the ground can almost always be concluded from the existence of the consequent and non-existence of the consequent from the non-existence of the ground. This occurs because, as is shown in § 37, each line determines the position of another, and it is a matter of indifference from which line one begins, i.e., which line one will consider to be the ground and which the consequent. One can be convinced of this by going through all the geometric theorems. It is only when it is not merely a question of figures, [153] i.e. of the position of lines, but of areas, without regard to figures, that one cannot generally conclude from the existence of the consequent to the existence of the ground, or rather one cannot reciprocate the propositions and make that which is conditioned into the condition. An example of this is provided by this proposition: if triangles have equal bases and equal heights, then they are equal in area. It cannot be converted: if triangles have equal area, then their bases and heights are also equal. For the heights can be of inverse proportion to the base.

It has already been mentioned in § 20 above, that the law of causality does not admit of reciprocation, since the effect can never be the cause of its cause, and therefore the concept of reciprocal action,[c] given its actual sense, is not admissible. – According to the principle of reason of cognition, a reciprocity can occur only with convertible concepts, because only the spheres of these are coextensive. Otherwise, there is a vicious circle.[d,155]

§ 49[156] Necessity

The principle of sufficient reason in all of its forms is the sole principle and the sole support of any and all necessity. For *necessity* has no other genuine and clear sense[a] than the inevitability of the consequent when the ground is posited. Therefore any necessity is *conditioned*; thus, absolute, i.e., unconditioned necessity, is a contradiction in terms.[b] For *being necessary* can never mean anything other than following from a given ground. In contrast if one wants to define it as 'that which cannot not be', one merely provides a verbal explanation – one takes refuge behind a highly abstract concept in order to avoid a factual explanation, from which refuge one is immediately driven by the question: how is it possible, or even conceivable, that something could not not be, since everything that exists is only given empirically? For the result is that this something is possible only insofar as a *ground* from which it follows is posited or already present. [154] Being necessary and following from a given ground are convertible concepts, such that one can always be substituted for the other. Thus the favourite concept of the philosophasters, '**absolutely** *necessary being*', contains a contradiction: through the predicate '*absolute*' (i.e. depending on nothing else) the concept eliminates the only determination through which '*necessity*' is conceivable and makes sense. Here again we have an example of the *misuse of abstract concepts* in the surreptitious service of the metaphysical, as I have similarly demonstrated for the concepts '*immaterial substance*', '*absolute ground*', and '*cause in general*'.* I cannot emphasize enough that all abstract concepts are to be checked[c] against *intuition*.

Hence there is a four-fold necessity in accordance with the four forms of the principle of sufficient reason: 1) logical necessity, according to the principle of reason of knowing, on the basis of which if one has affirmed the premises, the conclusion is given without fail; 2) physical necessity, according to the law of causality, on the basis of which as soon as the cause has appeared, the effect cannot fail to appear; 3) mathematical necessity, according to the principle of reason of being, on the basis of which any expressed relation of a true geometric theorem is as the theorem states, and any correct calculation remains irrefutable; 4) moral necessity, according to which any human being, and even any animal, upon the appearance of a motive, must carry out the only action which is in conformity with his innate and inalterable character, which action now follows as inevitably as any other effect from a cause, even if it is not as easy to predict as anything else because of the difficulty of fathoming and completely knowing the individual empirical character and its allotted sphere of knowledge (to investigate this is a different thing from becoming acquainted with the properties of a neutral salt and, thereupon, to predict its reaction). I never tire of repeating this because of the knuckleheads [155] and numbskulls who have no respect for the unanimous instruction of so many great minds, and who are always bold enough to assert the opposite for the benefit of their spinning-wheel philosophy. Still I am no philosophy professor who must show obeisance to the folly of others.

§ 50[157] Series of grounds and consequents

According to the law of causality, the condition is repeatedly conditioned and, indeed, in the same way; hence, an infinite series[a] arises in the past.[b] It is the same with the ground of being in space: every relative space is a figure having boundaries which put it in connection with another relative space and which again condition the figure of this other relative space, and so on, *in infinitum*, in all dimensions. If one considers a single figure by itself, the series of grounds of being have an end because one commences with a given relation, just as the series of causes has an end if one arbitrarily[158] stops at some cause. The succession of grounds of being in time has a infinite extension into the past as well as into the future,[c] since each moment is conditioned by an earlier one and necessarily brings about the one which follows; thus, time can have neither beginning nor end.[159] In contrast, the series of grounds of cognition, i.e., a series of judgements, in which any one judgement imparts logical truth to another, always ends somewhere, specifically either in an empirical, a transcendental,[160] or a metalogical truth. If the first, that is, an empirical truth, is the ground of the major premise to which one has been led,[161] and if one continues to ask ‘why’, then what one demands is no longer a ground of cognition, but[162] a cause; i.e. the series of grounds of cognition shifts to a series of grounds of becoming. But now if one once does the opposite, that is, one allows the series of grounds of becoming to shift to the series of grounds of cognition, so that one would be able to find an end, then this is never brought about by the nature of the thing, but by special intention, that is a trick – indeed, it is the well-known sophism going under the name of the ontological proof.

That is, one [156] may use the cosmological proof to arrive at a cause at which one prefers to stop so that one can make it into the *first cause*, but one cannot then bring the law of causality to a stop: it will continue to ask ‘why’. So then one secretly puts it aside and substitutes for it the principle of reason of knowing, which seems remotely similar. Instead of the required cause, one thus provides a ground of cognition created out of the concept itself, a ground still to be demonstrated, the reality of which is thus still problematic. And this ground of cognition – because it is still a ground – must now figure as a cause. Of course, one had set this concept up in advance for this very purpose, ascribing reality to this concept, possibly for decency's sake lightly veiling it, and preparing for the delightful surprise of later finding it in there – as we have precisely elucidated above in § 7. – Yet the chain of causes ultimately rests on a proposition of transcendental or metalogical truth, and if one were to continue to ask ‘why’, there would be no answer because the question makes no sense; that is, one does not know what sort of ground it requires. The principle of reason is the *principle of all explanation*: to explain a thing means to trace its given existence or connection back to some form of the principle of reason, according to which form the existence or connection must be as it is. Accordingly, the principle of reason itself, i.e., the connection that it expresses in any of its forms, cannot be further explained because there is no principle to explain the principle of all explanation – like an eye, which sees everything except itself.[163] – White there are series of motives, in that the decision to accomplish an end becomes the motive for the decision to accomplish a whole series of means, yet this series always ends in the past[a] in a representation from the first two classes, where the motive that originally had the capacity to set this individual will in motion is to be found. That it could do this[164] is a datum by which we can recognize the empirical character that is given here; but why the empirical character was moved by it cannot be answered because the intelligible character lies outside of time and never becomes an object. The series of motives as such thus finds its end in such an ultimate motive, and [157] according to whether its final link was a real object or a mere concept, it shifts to either a series of causes or into a series of cognitive grounds.[165]

§ 51[166] Every science has as its guiding thread one form of the principle of reason in preference to the others

Because the question 'why' always seeks a sufficient reason, and because the connection of findings[a] through the principle of sufficient reason distinguishes a science from a mere aggregate of findings, in § 4 'why' was called the mother of all sciences. It is also the case that in each science one of the forms of our principle is the guiding thread more so than the others, although in each science the others also apply, but in a subordinate role. Thus the ground of being is the principal guiding thread in pure mathematics (although in proofs the exposition proceeds only through cognitive grounds); at the same time, the law of causality appears in applied mathematics, and this law completely dominates in physics, chemistry, geology, and the like. The principle of reason of knowing applies throughout all sciences, since in all sciences the particular[b] is known from the general.[c] However, this principle is the main guiding thread and nearly the sole governing principle in botany, zoology, mineralogy, and other classificatory sciences. If one considers all motives and maxims – whatever they be – to be data by which action is explained, the law of motivation is the principal guiding thread of history, politics, pragmatic psychology, etc. – If, however, one makes motives and maxims themselves, according to their value and origin, into the subject of investigation, the law of motivation is the guiding thread of ethics. In the second volume of my principal work, ch. 12, p. 126,[d] one may find the main classification of the sciences, worked out according to this principle.[167]

§ 52[168] Two principal results

In this treatise I have attempted to show that the principle of sufficient reason is a common expression [158] of four completely different relations, each of which is based on a particular law, given *a priori* (since the principle of sufficient reason is synthetic *a priori*); and according to the principle of *homogeneity*, it must be accepted that just as these four laws (discovered through the principle of *specification*) come together in a common expression, they also arise from one and the same original constitution[a] of our entire cognitive faculty, which is their common root, and which, accordingly, must be regarded as the innermost core of all the dependency, relativity, instability, and finiteness of objects of our consciousness, which is confined to sensibility, understanding and reason, subject and object, or that very world which the brilliant Plato repeatedly disparaged as 'that which always becomes and passes away, but never truly is',[b] the cognition of which would be only 'opinion amid non-rational perception',[c] and which Christianity, in the correct sense, called *temporality*, following the very form of our principle that I have indicated in § 46 as its simplest scheme and the prototype[d] of all finiteness. After all, the general sense of the principle of sufficient reason may be reduced to the fact that always and everywhere each thing is only *by means of another thing*. Now, however, the principle of reason is *a priori* in all its forms, thus rooted in our intellect; therefore, this principle cannot be applied to the totality of all existing things – the world – including this intellect in which the world resides.[e] For such a world, presenting itself by means of *a priori* forms, is for just this reason mere appearance; therefore, what applies to this world as a consequence of just these forms can have no application to the world itself; i.e. to the thing in itself presenting itself in the world. Therefore, one cannot say 'the world and all things in it exist by means of something else' – which proposition is simply the cosmological proof.[169]

If in the present treatise I have achieved the derivation of the result as just expressed, then I would think that this would make the demand that any philosopher who in his speculations builds his conclusion on the principle of sufficient reason or who just speaks of a ground at all would have to determine which type of ground he means. One might suppose that as a result of this, [159] whenever there is a question of a ground, no confusion would be possible. Except there are far too many examples where either or we find the expression of ground and cause confused and used without discrimination, at other times we find talk *in a general way*, without any more precise determination, of a ground and of that which is grounded, of the principle and of that which follows the principle,[f] and of the condition and of that which is conditioned, perhaps exactly because there is a secret awareness of an unjustified[170] use of this concept. Kant himself speaks in this way of the thing in itself as the *ground* of appearance. Thus he speaks

(*Critique of Pure Reason* 5th edn, p. 590)[a] of the *ground of the possibility* of all appearance, of an *intelligible ground* of appearances, of an *intelligible cause*, of an *unknown ground* of the possibility of the sensible series in general (p. 592),[b] of a *transcendental object* lying at the *ground* of appearances, of the *ground* why our sensibility has this one condition much more than all other supreme conditions (p. 641),[c] and the like in many passages. All of this appears to me not to be in keeping with those weighty, profound, indeed, immortal words (p. 591): ‘that the contingency* of things is *itself only a phenomenon* and could lead to no other regress than the empirical one that determines *phenomena*.’[d]

Anyone familiar with modern philosophical works knows that, since Kant, the concept of ground and consequence, of principle and that which follows the principle, etc. are used much more indeterminately and in an absolutely transcendent way.[171]

The following is my objection to this indeterminate use of the word *ground* and of the principle of sufficient reason in general – it is also the second result, closely connected to the first, that this treatise provides concerning its proper object. Through their common character, and given that all objects for the subject are distributed under them, the four laws of our cognitive faculty (the common expression of which is the principle of sufficient reason) are shown to be fixed through one and the same original [160] constitution and intrinsic characteristic[e] of the cognitive faculty,[172] which appears as sensibility, understanding, and reason. Since this is so, even if one imagines that a new, fifth class of objects could arise,[173] we would still have to presuppose that in this fifth class the principle of sufficient reason would also appear in a new form. So, nevertheless, we may not speak of an *absolute ground*, and there is no more a *ground in general* than there is a *triangle in general*; rather, this is an abstract concept achieved through discursive thought[f] – nothing more than a representation from representations – a way of thinking of many things through one means. Just as any triangle must have acute, right, or obtuse angles, must be equilateral, isosceles, or scalene, so too any ground must belong to one of the four stated possible types of grounds, since we have only four definitely differentiated classes of objects; and thus any ground must apply within one of the four stated possible classes of objects of our faculty of representation – which, consequently, presupposes as already given its use in connection with that faculty, i.e., the whole world, and is restricted to this world – but any such ground cannot apply beyond this world or entirely beyond all objects. However, should anyone think differently about this, and believe that a ground in general is something different from what is drawn from the four types of grounds and expresses what is common among them, then we renew the controversy between the realists and nominalists, and in the present case I must stand with the latter.[174]

a καὶ μαθήσεως οὐκ ἀπὸ τοῦ πρώτου, καὶ τῆς τοῦ πράγματος ἀρχῆς ἐνίοτε ἀρκτέον, ἀλλ᾽ ὅθεν ῥᾷστ᾽ ἄν μάθοι (*et doctrina non a primo, ac rei principio aliquando inchoanda est, sed unde quis facilius discat*) [1013a2 now found in V, 1]

b *Urtypus*

a [Hübscher *SW* 3, 41–2]

b [A202/B248]

c *umgebende Medium*

a *Daseyn*

b *Nichtseyn*

c *Wechselwirkung*

d *circulus vitiosus*

[*] For ‘immaterial substance’ see *The World as Will and Representation* I, 582ff. (of the 3rd edn) [*WWR* 1, 520–1 (Hübscher *SW* 2, 582–3)] and for ‘absolute ground’ see § 52 of the present work. [This note was added by Julius Frauenstädt, the first editor of Schopenhauer's collected works, and is maintained and noted as such in Hübscher's edition]

[a] *Sinn*

[b] *contradictio in adjecto*

[c] *kontrolliren*

[a] *series in infinitum*

[b] *a parte ante*

[c] *a parte post*

[a] *a parte priori*

[a] *Erkenntnissen*

[b] *Besondere*

[c] *Allgemeinen*

[d] [Hübscher *SW* 3, 139ff.]

[a] *Urbeschaffenheit*

[b] ἀεὶ γιγνόμενον μὲν καὶ ἀπολλύμενον, ὄντως δὲ οὐδέποτε ὄν

c δόξα μετ᾽ αἰσθήσεως ἀλόγου

d *Urtypus*

e *dasteht*

f *Princip …Principiat*

***** Empirical contingency is meant, which for Kant means the same as dependence on other things – concerning this, I refer to my criticism, p. 524 in my ‘Critique of Kantian Philosophy’ [*WWR* 1, 494–5 (Hübscher *SW* 2, 552–3)]

a [A562/B590]

b [A564/B592]

c [A613–614/B641–642]

d [A563/B591]

e *dieselbe Urbeschaffenheit und innere Eigenthümlichkeit*

f *durch diskursives Denken gewonnenen Begriff*

Variants in different editions

A 1813: *On the Fourfold Root of the Principle of Sufficient Reason* (*Ueber die vierfache Wurzel des Satzes vom zureichenden Grunde. Eine philosophische Abhandlung. Rudolstadt, in Commission der Hof-Buch-und-Kunsthandlung,* 1813) as provided in Hübscher *SW* 7.

B 1847: *On the Fourfold Root of the Principle of Sufficient Reason* (*Ueber die vierfache Wurzel des Satzes vom zureichenden Grunde. Eine philosophische Abhandlung. Zweite, sehr verbesserte und beträchtlich vermehrte Auflage*. Frankfurt-am-main: Joh. Christ. Hermann'sche Buchhandlung. F.E. Suchsland, 1847) as provided in Hübscher *SW* 1. This text provides the basis for the present translation. B is an extensive revision of A, and the end notes show important differences as well as Schopenhauer's important handwritten variants and notes to both B and A. The present translation excludes minor stylistic variants and spelling changes. Wherever Schopenhauer quotes English in the original, we provide the text as he quotes it. We note those instances in which Hübscher follows Frauenstädt's inclusions of handwritten additions.

1 Note on the inside of the cover in A [Hübscher *SW* 7, 136]: '*If* and *because*, like *condition* and *cause* are different. *Condition* is that to which the cause is connected. E.g. *If* it is cold, migrating birds leave *because* they need a warm climate.'

Note across from the title page in A [Hübscher *SW* 7, 136]: 'We cannot *think* of anything which contradicts the condition of all thought, we cannot *experience* anything which contradicts the conditions of all experience. We cannot experience, e.g. a body of more than three dimensions, a becoming, a development, an action that does not proceed in the succession of time. We know *a priori* that each body has three dimensions, every event has a *time* and form, succession and a *cause*. It is the same with the *senses*. We cannot see or hear anything which contradicts the *a priori* conditions of seeing and hearing. It is the same with digestion [*Verdauen*] and everything.'

2 Footnote in A includes the reference to the *Philebus*, and to 'Kant *Critique of Pure Reason*, pp. 673–88 [B673–688] 2nd and following edn'.

3 in A: 'unity' [*Einheit*].

4 in A: 'fundamental qualities of our mind' [*Grundbeschaffenheiten unsers Geistes*].

5 Section title in A: 'An Advantage that this Inquiry Could Have'.

6 The following from A is deleted in B, between '…discovered later' and 'Above all…': 'For the Horatian fable of the country mouse and the city mouse is always very applicable for philosophy. Here too we must prefer that which is little, but possessed with confidence and irrefutable certainty, to that which is a lot, built for the most part on rhetoric, on being impressive, on being contentious, the pleasure of which can in any moment be disturbed by uncorrupted and fearless criticism. For this reason, everything which works for better understanding, must, it seems to me, be welcome in philosophy, especially since the complaints of philosophers that have frequently been heard are that they are not understood, and conversely, readers' complaints about the obscurity of philosophers have, to be sure, been heard, while without a doubt both parties always wish to make themselves understood precisely. Or could there even be times in which intelligibility and, consequently, understanding, are feared and shunned? Now such a time could be quite prosperous, even quite religious and virtuous, only never philosophical'.

7 In B, after 'its great depth', 'Clarity is the good faith…' to '…This explains why, in some writings,' replaces in [6] A: 'Moreover, I am of the opinion that anyone who understands himself completely, which, in fact, is rare, must be able to make himself understandable to others if, for their part, they have the will to understand him, which is also not always the case. For in any human being all abilities and all fundamental truths are present although in greatly differing degree, and only in a few to a preeminent degree: and it is for that reason that few have the ability for production in the arts or discovery and invention in the sciences; in contrast, we all more or less have the ability for receptivity, for understanding, and for recognition of what is true, if it is just presented to us clearly, i.e., separated from all secondary matters. Thus one who produces something out of his own power could be compared to a musical instrument; in contrast, the others could be compared to glass or metal vessels that certainly will themselves produce no music, but still will echo and transmit the sounds of any instrument. But only pure tones resound; impure do not: this annoys many people, which is why it may happen that in some writings…'.

8 Added in B: 'e.g. those of Schelling'.

9 In A: 'The importance of the principle of sufficient reason is so great that I dare to assert that it is…'.

10 In A: 'Science is specifically defined as a system…and is set in opposition to…'.

11 'Therefore, Plato already says…*Meno* p. 385 Bip.' added in B.

12 In A: 'most contain'.

13 'which Aristotle already expressed…*Metaphysics* V, 1. ' added in B.

14 In A: 'Since it is constantly made by us *a priori*'.

15 In [8] A, the sentence is 'Since this principle is a fundamental principle [*Grundsatz*] of all cognition, a more or less exactly determined, abstract expression for such a fundamental principle was without a doubt also

discovered very early; thus, it would be difficult and, moreover, not of great interest, to demonstrate where such a one is first to be found.’

16 ‘*Philebus* p. 240 Bip. and again in the *Timaeus*…according to preceding causes’ added in B.

17 In B: ‘although along with some superficiality and confusion’; but in A: ‘although in any case rather arbitrarily’.

18 A long passage, over three paragraphs, ‘Now this is the origin of the classification of the causes…in contrast, as far as I know, they also did not attain consciousness of the necessary distinction in question here’ added in B, replacing in A: ‘For the Scholastics too the principle that nothing is without a cause was an axiom. According to Wolff's claim, however, Leibniz is the first who put forth our principle in a universal way, formally as a fundamental principle. Also he first clearly separated two distinct applications of the same: the first applies specifically to the judgement that for anything to be true, it must have a ground from which it follows; the second applies to alterations in the external world, that none could happen without a cause’.

19 In A: ‘in the keen-sighted [*scharfsinnigen*] Descartes we still find no clear idea [*Begriff*] of this distinction’ for ‘our excellent Descartes…and we will soon see to what serious and deplorable results this has led metaphysics’ in B.

20 ‘But actually it is …’ to the end of § 7 is added in B.

21 From beginning of § 8, ‘Although Spinoza's philosophy consists…’ to ‘…*ibid*. prop. 25. –’ replaces the following in A: ‘That Spinoza had absolutely no clear concept of the distinction between ground and consequent and cause and effect is indicated by countless passages in his writing. Permit me to cite only a few examples’.

22 A long passage, over six paragraphs, ‘However, this view will lead at its height…’ to ‘…and from his hands Mr von Schelling has accepted it credulously’ replaces the following in A: ‘One can see the total confusion of ground and consequent with cause and effect. One finds more examples of this sort in *Ethics* I, definition 1. – prop. 11, proof 2. – prop. 24, coroll. – prop. 28, proof and note. – But not only this, rather the mixing and confusion of these relations [*Relationen*] is precisely connected with the basis [*Basis*] of his system (of course, what concerns us here is only the demonstrative part, the presentation [*Darstellung*]). He posits a substance, God, whose attributes [*Attribute*] or accidents [*Accidentien*] are thought and extension. Now substance and accident is the correlate to subject and predicate in judgement. In analytic judgement, from the concept of the subject all its predicates follow. Thus the same relation [*Verhältniß*] must also exist between substance and accident, and Spinoza accepts it between God and world, that is, the relation of cognitive ground and consequent. ‘From the necessity of the divine nature, everything that can fall under infinite intellect must follow.’ [*Ex necessitate divinae naturae omnia quae sub intellectum infinitum cadere possunt, sequi debent*.] (*Ethics* I, prop. 16.) But at the same time he everywhere calls God the cause of the world. ‘Everything that exists, expresses the power of God who is the *cause* of all things’ [*Quidquid existit Dei potentiam, quae omnium rerum* causa *est, exprimit*], *ibid*. prop. 36. proof – ‘God is the immanent *cause* of all things, but not the transient’ [*Deus est omnium rerum* causa *immanens, non vero transiens*], *ibid*. prop. 18. – ‘God is the *efficient cause* not only of things existing, but also of the essence of things’ [*Deus non tantum est* causa efficiens *rerum existentiae, sed etiam essentiae*], *ibid*. prop. 25. – (The passages cited above provide more examples.) Thus the total mixing of the concept of the cognitive ground and consequent with cause and effect is precisely connected with the basis of his presentation.’

23 § 9 of B replaces § 9 of A: ‘Thus Leibniz is the first in whom we find a clear concept of this distinction. In his *Principles of Philosophy* [*principiis philosophiae*] he very decidedly distinguishes cognitive ground [*ratio cognoscendi*] from efficient cause [*causa efficiens*] and posits both as two variations of the principle of sufficient reason [*principii rationis sufficientis*], which here he formally puts forth as a fundamental principle of all cognition’.

24 ‘is thus the first…discussed their distinction’ is added in B.

25 ‘however, it serves to point…which then follows §§ 881–884’ is added in B.

26 In B ‘an inadmissible idea’ replaces in A ‘a completely empty concept, by which nothing can be thought’.

27 ‘in general’ is added in B.

28 ‘Now that Wolff wants…can wait longer for the others’ replaces in A: ‘Now why he wants to call the first-mentioned property of this state “principle of being” and the second “principle of becoming” I do not understand.’

29 ‘That the stone is such as it is,…true sense of the causal law comprehensible’ replaces in A: ‘That the stone is such as it is, with such capacity for heat, etc., is, just as much as its coming into contact with free heat, a result of a chain of previous causes, “principles of becoming”; the coincidence of both qualities constitutes the state, which, as cause, occasions the warming, as effect, and nowhere does there remain room for Wolff's “principle of being” which I thus do not acknowledge, and I have mentioned it so extensively because I will use the term with a completely different meaning below.’

30 In A, the paragraph ‘In his *Theory of Reason* § 81, *Reimarus*…still confuses it with cause’ is at the end of § 11, after paragraphs on Lambert and Platner (‘Plattner’ in A).

31 This section on Hume is added as § 12 in B, resulting in a re-numbering of the subsequent sections through to § 15 of B.

32 In B, from beginning of § 13, ‘The main passage in *Kant*…’ to ‘…that the Kantian school has produced, e.g., the ones’ replaces in A: ‘Kant, with whom an epoch in philosophy began, has also had a beneficial influence on logic. He effected a more decided division of logic from transcendental philosophy or earlier metaphysics. However, Kant introduces our principle of sufficient reason in both. In the *Logic* that bears his name, p. 73, [now called *The Jäsche Logic* Ak. 9: 51] he calls the principle the criterion of external logical truth or the rationality of cognition, on which rests the actuality (p. 75) of cognition. But in "Transcendental Logic" [*Critique of Pure Reason,* A201–2/B246–7] he introduces the principle [*Satz*] as the principle [*Princip*] of causality and even proves it as such, which I will discuss in detail in the appropriate place. Although he thus recognizes the distinction, he does not exactly determine its expression in keeping with this distinction (as I will show at the end of this essay) and he gives rise to obscurities and misunderstandings. Many excellent textbooks on logic that the Kantian school has produced, e.g.…'

33 Two paragraphs, 'In his "Letters on Spinoza's Doctrine" *F. H. Jacobi* says…' to '…deserves no place among the beliefs of serious and honest researchers' added in B.

34 In B 'as one which is directed not to its validity, but rather to the *a priority* of the law of causality' replaces in A 'which is of a completely different sense'.

35 'compare *Posterior Analytics* I, 3' added in B.

36 Added in B: 'In the 5th chapter we will discuss…' to '…he requires a proof for the right to require a proof'.

37 In B, 'Or again, when I ask why…that the left glove does not fit the right hand' replaces in A: 'If I ask in another example: why are you doing [*thust*] this? then you will indicate some sort of motive. Will this be a cause from which the action necessarily follows as an effect? No, for it cannot indicate to me anything from which the action necessarily follows; whereas, the connection between cause and effect is a necessary one. Or will it be a ground under which the action is to be subsumed as consequent? No, for the question concerns not a cognition, but a preceding alteration'.

38 In B the paragraph, 'Thus, since not all cases…must be determined before the concept of the species' is added to the end of § 15. In A, a similar, but separate section (§ 15), entitled 'All applications of the principle must be divided into definite species', is as follows: 'We see from the examples given that not all cases in which the principle of sufficient reason finds application can be reduced to ground and consequent and to cause and effect, that, thus, in this classification, the law of specification must not have been satisfied. But according to the law of homogeneity, we must presuppose that the cases of the application of the principle of sufficient reason are not infinitely different, rather that they all must be reducible to certain species. Now before I attempt this classification, it is necessary to determine what in all cases is specific to the principle of sufficient reason as its special character. The concept of genus must be determined before the concept of species'.

39 In A, § 16 reads: '*Our consciousness, as far as it appears as sensibility, understanding, and reason, divides into subject and object, and, so far, comprises nothing else. To be object for the subject and to be our representation are the same. All of our representations are objects for the subject, and all objects for the subject are our representations. But nothing existing of itself and independently, likewise nothing existing in isolation and apart, can become an object for us; rather, all of our representations stand in a connection that is governed by laws and of a form determinable a priori*. This connection is the sort of relation which the principle of sufficient reason, considered in general, expresses. This law governing all our representations is the root of the principle of sufficient reason. It is a fact, and the principle of sufficient reason is its expression. But generally, as it is advanced here, we are able to achieve it only through abstraction. It is given to us only through concrete cases [*Fälle* in concreto].

> Note: All assertions advanced in this section will be defended and explained through the whole of the following part of the treatise. The root

of the principle of sufficient reason will be clearly recognized through the consideration of its four parts’.

40 § 16 in B incorporates minor phrasing from a separate § 17 in A, called ‘Its fourfold nature’. (On this alteration, see the translators’ Introduction.) § 17 in A reads: ‘In the aforementioned cases, the law of necessary connection [*Verknüpfung*] of all of our representations reveals itself, and consequently the principle of sufficient reason, as an expression of the same law, is applied. Considered more closely, however, the principle divides itself according to the laws of homogeneity and of specification into definite species, clearly distinguished from one another. I maintain that the number of these species is *four*, governed by the *four classes* into which everything which can become an object for us, i.e. all of our representations, break down. These classes will be advanced and discussed in the next four chapters.

However, since Kant's deduction of the categories, there has been almost nothing so basic and immediate that it might not be deduced *a priori*. What Goethe said has even happened to things the grounds of which no earlier time had hoped to reach.

Therefore it might be expected that now I too will not fail to present an *a priori* deduction as my justification of this division. But I admit that I do not see the possibility of a deduction *a priori* of the four classes of representations which are only given to us. Nevertheless I could certainly advance a fearsome deduction that, even if empty and groundless, would serve as a scarecrow for doubters, if only through its tediousness. But I greatly fear that in doing so I would recall the inflated wineskins which had been hung before the door of *Apuleius*’ home, so that when the wind moved them as he came home drunk at night, he would take them to be robbers who wanted to break into his house.* Therefore, I ground my division of all of our representations upon inductions, which are not amenable to any other proof than the challenge of finding some sort of object that does not belong under any one of the four classes I have advanced or presenting two of these classes as reducible to only *one*.

Incidentally, I note that even Kant's enumeration of the categories is grounded ultimately upon induction: specifically, it is drawn up according to the logical table of judgements, and the division of the properties of judgements into four species, each of which is comprised of three types, is solely grounded on induction, which Kant himself indicated as he said in advancing them: ‘If we…attend only to the mere form of the understanding in judgement, we *thus find* that the functions of thinking can be brought under four headings [*Titel*].’ (*Critique of Pure Reason* p. 95 [A70/B95].) And in the same work (p. 145 [B145]) he says: ‘For the peculiarity of our understanding, that it is able to bring about the unity of apperception *a priori* only by means of the categories and only through precisely this type and number of them, no further ground may be given any more than can be given for why we have precisely these and no other functions for judgement or for why space and time are the sole forms of our possible intuition.’ But as far as his *deduction* of the categories is concerned, it is by no means a demonstration that there must be such categories and just that many; rather, it is ‘the explanation of the way in which concepts can relate *a priori* to objects’ [A85/B117]. Therefore, for the present division of the possible objects for the subject, a deduction is not only unnecessary, but a requirement for it would be without sense and meaning. As has been said, this division is grounded solely on induction. The principle of sufficient reason appears in a different form for each of the four classes of objects which I now advance for our faculty of representation, but it is everywhere acknowledged that, as indicated above, the principle is to be recognized as ultimately the expression of the same thing and as springing from the same root (given in § 16), the fourfold nature of which becomes evident from just these four forms. At the same time as I advance each class of representation, in each case I will indicate the specific form of the principle of sufficient reason which governs as the law of connection.’

***** [footnote in A] ‘Apuleius *Metamorphosis* Book II *in fine* [at the end] and Book III *initio* [at the beginning]’.

41 § 17 in B replaces § 18 in A, which reads ‘The first class of possible objects of our faculty of representation is that of *the complete* *representations that comprise the totality of an experience* [*das Ganze einer Erfahrung*]. The principle of sufficient reason governs in it as the law of causality, of which more is to follow.

> The representations belonging to this class are *complete*. This refers to Kant's classification [*Eintheilung*] and means: they encompass that of sensible appearance which is *material* as well as that which is *formal*. They constitute *a totality of experience*, meaning that they stand in a connection that is recognizable only through the understanding. Thus they concern our entire sensibility and our entire understanding. They are what is called *the objective, real world*.'

42 The title of § 18 in B, 'Outline of a transcendental analysis of empirical reality' replaces the title of § 19 in A: 'Outline of an analysis of experience. The understanding'. (On this and subsequent alteration to this section, see the translators' Introduction.)

43 In B 'Their *perceptibility* is *matter*…in § 21' replaces in A: 'Their *perceptibility*, i.e., *matter*, can only be more carefully discussed below (§ 42): here it is presupposed'.

44 After 'perceived' Schopenhauer's handwritten addition to A includes 'by its course' [Hübscher *SW* 7, 136].

45 In B 'thus this representation of simultaneity…time and space' replaces in A: 'It is indeed false to say that in space everything is *simultaneous*. For in mere space there is as little simultaneity as there is a before and after, and the latter representations are only possible by means of time, the former, that of *simultaneity*, only by means of the unity of the representations of time and space'.

46 In B 'there would be no *change*' replaces in A 'we would know [*kennen*] no change'.

47 In B ‘However, empirical representations…as a product proceeds from its factors’ replaces in A: ‘However, complete representations constituting the totality of experience appear in both forms simultaneously, and an *intimate unity* of both is even the condition of experience, which, as it were, proceeds from them as a product proceeds from its factors’.

48 In B ‘What creates this *union*’ to the end of the section replaces in A: ‘What brings this *union* about is the *understanding*: its *categories* are the various means by which it does its business [*die verschiedenen Weisen dieses seines Geschäfts*]. It creates *experience* through the intimate union of these heterogenous forms of sensibility, i.e., a *totality of representations* in which everything else of this class is contained and determined, subjected to laws we know *a priori*; in which, moreover, countless representations (in common parlance [*vulgo*], objects) are *simultaneous*; in which, despite the ceaselessness of time, substance persists, and despite the rigid immutability of space, the states [*Zustände*] of substance change; in which, in brief, the entire, objective, real world exists for us. However, it would be a very troublesome and difficult business, lying far beyond the bounds of my present task, to observe more profoundly and discuss more closely the way in which, through the function of the understanding, this union and, along with it, experience arise, i.e. to give a complete analysis of experience. Kant's transcendental analytic of the pure understanding [*Critique of Pure Reason* I, Pt. II, Division I] is an important preparation for this. However, through attentive consideration of the individual categories and their relations to the forms of sensibility, anyone can be convinced of the truth of the aforementioned in general and of the new explanation of the understanding thereby advanced (which understanding, in the chapter following, is likewise distinguished from reason, explained in a new way and more precisely than has been done until now)’.

49 The titles of § 19 in B and § 20 in A are identical: ‘Immediate presence of representations’.

50 In B ‘the representation of matter and thus that of a persisting external world’ replaces in A: ‘totality of representations of an experience’.

51 In B ‘That representations are *immediately present…*’ to ‘…insofar as they belong to this complex’ replaces in A: ‘and since the subject will not remain with this *one* representation, nor, according to the laws of the world of experience, can it remain, there is no simultaneity in mere time, thus, any representation will always disappear, once more driven out by another, following an order not determinable *a priori*, but depending on circumstances soon to be mentioned. Since, despite the ephemerality and the isolated nature of representations with respect to their immediate presence in the consciousness of the subject, given the function of the understanding, there nonetheless remains for this subject the representation of a totality of experience, as I have described above. And so with respect to this opposition, representations, insofar as they belong to the totality of representations of experience’.

52 ‘This view of the matter, which is common, is called *realism*… inevitably realistic fundamental view of Judaism. But realism overlooks’ is added in B.

53 In B ‘Realism overlooks the fact that the object no longer remains object…all objective existence is also immediately nullified’ replaces in A: ‘It was overlooked that the object is absolutely nothing apart from its reference to the subject, and that, if one takes this away or abstracts from it, absolutely *nothing* else remains, and the *existence in itself* that was attributed to it was an absurdity [*Unding*] and vanishes’.

54 In B ‘*Leibniz*, who indeed felt the object's being conditioned by the subject…that which represents and the representation’ replaces in A: ‘*Leibniz*, since he could not free himself from the thought of objects existing in themselves, independent of their reference to the subject, i.e., of their being represented, but wanted more closely to determine this being, came upon the necessity of explaining the objects in themselves as subjects (monads), and in this way he gave the most eloquent proof that our consciousness within the limits of sensibility, understanding, and reason, never knows the subject and object, that which represents and the representation’.

55 ‘who never came to understand the matter and, therefore, did not arrive at clear conceptions, had nevertheless understood’ added in B.

56 B omits from A: ‘Meanwhile we will discuss this identity of the subjective and the objective fully below (§ 42). For now we have to note the following.

> The distinction between subject and object, that which cognizes and is never cognized [*dem Erkennenden, nie Erkannten*] and that which is cognized but never cognizes [*dem Erkannten, nie Erkennenden*] is the most important of all distinctions that we are able to comprehend. It appears to be indicated in many languages in that the “I am” [*Sum*] is from other stock [*Stamm*] than the “is” [*Est*]. But the infinitive is generally the unification of both meanings under the concept of a “to be” [*Seyn*], the means by which I, the knowing subject, and the table, on which I presently write, share a common predicate – this infinitive is the progenitor [*Stammvater*] of many and more fertile errors, from which an entire genealogy of error [*Sphalmatogonie*] can issue: e.g. (assuming that the double meaning of progenitor should apply to these) it engenders substance, realities, perfections, and many others, and from these the most diverse children, e.g., from substance: dualism, Spinozism, rational psychology, etc. Nonetheless, that any concept of a “being”, generally expressed in the infinitive, inevitably goes with our languages, indeed our reason, is, like so much else, a proof of how little we are fitted for cognition and how much for willing, so that if we always remain children in the former, we can nonetheless be heroes in the latter at any age’.

57 In the note ending § 19 of B ‘nothing is to be understood by this… remains ideal’ replaces in A, in the note ending § 20: ‘nothing is to be understood by this other than complete representations connected in a totality of experience’.

58 The title of § 20 in B is identical to that of § 23 in A.

59 ‘appears as’ in B, § 20, replaces ‘governs’ in A, § 23.

60 ‘All objects that present themselves in the totality of representations that constitutes…in the direction of the course of time’ in B, § 20, replaces in A § 23: ‘All representations contained in the totality of representations, which we call experience, are connected to one another through it [the principle of sufficient reason of becoming]’.

61 Everything from near the beginning of § 20 in B, ‘1) a state of affinity to oxygen, 2) a state of contact with oxygen, 3) a state of a certain temperature’ to the end of § 20 in B replaces the following in § 23 of A: ‘1st) a state of affinity to oxygen [*Sauerstoff*], 2nd) a state of contact with oxygen, 3rd) a state of a certain temperature. Since the ignition must follow immediately, as soon as the first state was present, but since this ignition first follows at a determined moment in time, then this first state must not always have been present, but must have followed from a previous one, e.g., from the state of the appearance of free heat in a body, from which the increase in temperature must follow. The state of the appearance of heat in a body is again occasioned through a preceding one, e.g., the sun's rays falling on a burning lens; this perhaps by a cloud's moving away from the direction of the sun; this by wind; this by uneven density of air; this by other states, and so on indefinitely [*in indefinitum*]. When all determining factors, except *one*, obtain for the occurrence of a new state, this *one* – if it appears just now, that is, last – will be called the cause *par excellence* [κατ᾽ ἐξοχήν]. Calling this factor the cause may in everyday life be allowable, but is not a precise means of expression since determining that a state has been the last to occur gives it no special standing over the others. In the example just mentioned, there is no justification for calling the cloud's moving away the cause of the ignition because it occurs later than the burning lens' being directed at the object; this could have occurred later than the cloud's moving away, and the addition of oxygen could have occurred even later than this, and following customary language such chance determinations of time would have decided which of these is the cause. Moreover, on a more correct consideration we find that the *entire state* is the condition of the one following, so that it does not matter in which order in time its determinations have come together. This customary language drags in more language with it that leads to great confusion, specifically that the object will be called a cause, rather than the state; e.g. in the example given above, some will call the burning lens the cause of the ignition, others the clouds, others the sun, others the oxygen, and so on arbitrarily, according to preference. But there is absolutely no sense in saying that one object is the cause of another; rather, causality is a relation between two *states*, and with reference to this relation one is called a *cause*, the other *effect*, and their following one after another is called *consequence* [*Erfolgen*]. From this consideration that the law of causality refers only to states and not to things, that only states – not things – arise and pass away, come to be and cease to be, the principle of the permanence of substance automatically results, hence through mere analysis of the concept of causality, without synthesis. This is only incidental here.

> Since the second state must follow from the first according to a rule, i.e., every time, then the relation between cause and effect is a necessary one, and thus, the law of causality warrants hypothetical judgements and thereby proves itself to be a form of the principle of sufficient reason, on which all hypothetical judgements must be supported.
>
> I call this form of our principle the principle of sufficient reason of *becoming* because its application at all times presupposes an alteration, a becoming. Further, it belongs to its character that the cause always precede the effect in time (cf. § 53.), and only through this will it be recognized which of the two states bound by the causal nexus is cause and which effect.’

62 § 21 is added in B and has no equivalent in A; § 21 of A bears the title of § 22 in B.

63 Material covering more than one paragraph, ‘In the *Morgenblatt* of 23 October 1817…’ through to ‘of the *lobes* or *hemispheres*’ is Schopenhauer's handwritten addition to his copy of B [Hübscher *SW* 1, *Anmerkungen zu der Schrift über den ‘Satz vom Grunde*’ 3].

64 § 22 in B bears the title of § 21 in A, and in B Schopenhauer eliminated all of the material of the former § 21. The title and all the material of § 22 in A is dropped from B. We here provide §§ 21 and 22 of A.

In A, § 21 reads as follows:

§ 21 On the immediate object

We have seen that by means of the nature of the inner sense, which is the condition of cognition that always attaches to the subject, only a series [*Reihe*] of representations that is simple (admitting of no coexistence [*kein Zugleich anerkennende*]) and fleeting (not persistent) can be *immediately present* to the subject. Representations are immediately present, means: they are not cognized only in the unity of time and space carried out in the understanding, i.e., in the totality of experience, but they are cognized as representations of the inner sense in mere time. The condition mentioned above for the immediate presence of a representation of this class is that the representation stand in a causal relation with a determinate other representation belonging to the complete totality of experience. I call this representation *immediate*, in contrast to all others, which are *mediated* through it. This representation is *that of one's own body*: it is the *immediate object*. As one object among objects it is subject to the principle of causality governing this class of representations. This object is immediately present to the subject only by means of alterations that other objects effect in it, and what is called the existence of these other objects means nothing other than the capacity to be immediately present to the subject in such a way. But it is important to note that these objects are not only cognized in their acting [*Wirkung*], not only cognized in the modifications that they bring about in the immediate object – (if they were only cognized in their acting, then there would be only *one object* for the subject, the immediate object with changing states). Rather, the cause of any effect will also be cognized as the substrate of a power, i.e., as substance and as present in space (i.e. *other objects, as well as the immediate object, will be cognized as belonging to the totality of experience*) through the functions of the understanding and the applications of these to the forms of sensibility (which are not to be encountered in this class of representations without the material of sensibility). That an object would actually come into causal relation with an immediate object depends on all sorts of circumstances, on its position in space, on the medium in which it is to be found, on the receptivity of the immediate object (the health of the senses), etc. –

Comment 1. The concept of causality necessarily had to be anticipated here, although it will first be explained in the second half of this chapter.

Comment 2. It is worth noting for a fundamental understanding of what was said in this section, that all parts of the immediate object are again mediated objects, since one part affects the others. E.g.: my hand is my immediate object when through its touch I cognize the influence of another object on it and therefore cognize it as present in space. My hand is a mediated object when I see it, i.e., when I cognize its activity – its actuality – its filling space from the light rays reflected from it to my eyes. My eye, which here was an immediate object, again becomes mediated, since I touch it, etc. Furthermore, it is easy to observe that if I find among the objects given to me mediately some of a nature similar to one which is immediate to me, I conclude that they are also immediate objects for the subject, even if the similarity is more or less distant, as with animals. Plants provide the occasion for the supposition that they are indeed immediate, but not mediated objects for the subject, i.e., having life, but not sensibility.

In A, § 22 reads as follows:

§ 22 Mental images and dreams. Fantasy

However, once representations have been immediately present to the subject through the mediation of the immediate object, without this mediation the subject is afterwards capable of voluntarily repeating representations, even with alterations of their order and connection. I call such repetitions *mental images* [*Phantasmata*] and the faculty of these, the *fantasy* [*Phantasie*] or *imagination* [*Einbildungskraft*]. Its representations are indeed *complete* (according to the explanation given in § 18 [§ 17, in B]), but do not *belong to the totality of experience*; hence, they are not subject to the law of causality that governs this totality; rather, as actions [*Handlungen*] of mere choice, they are subject to the law of motivation which governs the class of objects of the faculty of representation to be discussed last. I mention them here because they belong here as complete representations, although through the predicate of voluntariness [*Willkürlichkeit*] they evade the law of the totality of experience and are subject to another law. Furthermore, I mention them because as *mental images* they can be distinguished from *concepts*, which are to be dealt with in the next chapter.

> We know how to distinguish mental images from real objects because in a waking state the *immediate object* is always *immediately present* to our consciousness; whereas the immediate presence of all other representations belonging to the totality of experience is based upon an alteration of the immediate object, which is thus included as an *integral part* of any representation belonging to the totality of experience present at any moment. It is the same way with mental images as with real objects: mental images (as repetitions) include representations of alterations of the immediate object and related functions of the understanding, although the more vivid the fantasy the weaker for the moment will be the presence of the immediate object to consciousness. The immediate object almost always remains such a presence for us that while mental images, including those that contain alterations in the immediate object, become objects for us, at the same time we still cognize the immediate object as *without* such alterations. But if mental images reach so high a degree of vivacity that they drive the immediate object completely out of our consciousness, then we can cognize them as mental images only through the reappearance of the immediate object in consciousness; and so this reappearance must again follow because the immediate object, as a representation belonging to the totality of experience, *persists* according to the laws of experience. According to the rule that will be noted in what follows in this chapter, any event must have a necessary place in some sort of series of causes and effects. We observe the immediate object just as we observe other objects, in the connectedness of experience, and we cognize the immediate object according to the laws of experience. In most cases of fantasy, this rule is not followed, so we recognize that the immediate object could not have

undergone the effect that was represented in the fantasy, since in it we can seldom follow the series of effects and causes very far and never to a conclusion. For example, if I have imagined that someone has entered my room, I can recognize it as a fantasy only by the first means indicated (through the reappearance of my immediate object in my consciousness), since inquiry into the circumstance that must have preceded the person's entry into my room can seldom go very far.

In sleep the immediate object, and with it all mediated objects, is withdrawn from consciousness: without an object, no subject; therefore, sleep without consciousness. Mental images, i.e., renewals of representations mediated by other means, but without this mediation, are nonetheless possible in sleep and known as *dreams*. Since in sleep the immediate object is withdrawn for us, in sleep we cannot distinguish mental images from real objects because the aforementioned criterion is lacking. We recognize the fantasy as such only upon waking, at the reappearance of the immediate object in consciousness – a necessary reappearance because all representations belonging to the totality of experience persist, independent of their immediate presence in consciousness. Waking is thus the single criterion distinguishing dreams from reality [*Wirklichkeit*]. If we doubt whether an event was dreamed or real, this occurs because the moment of waking is forgotten. Then we must resort to the much less certain criterion of investigating whether the event takes place in any chain of effects and causes.

65 With alterations, § 23 in B corresponds to § 24 in A, the title of which is ‘Disputation of Kant's Proof of this Principle and Assertion of a New Proof Composed with the Same Purport’.

66 In B ‘A principal object of the *Critique of Pure Reason…*’ through to ‘…In essence, it is the following’ replaces in A: ‘A principal object of the *Critique of Pure Reason* is a demonstration that the law of causality is universally valid for all experience, that it is limited to experience, and that it is *a priori*: it would be superfluous to repeat what is said there. Since I generally refer to what is said there, I will merely touch upon one point in the *Critique of Pure Reason* with which I cannot agree: namely, the proof of the apriority of the principle [of causality].

> But first this. In the *Critique of Pure Reason*, p. 246 [B246] Kant sees the principle of sufficient reason as identical with the law of causality. Salomon Maimon in his *Logic*, p. XXIV, Kiesewetter in his *Logic*, p. 16, G. E. Schulze in his *Logic*, pp. 32 and 84 have declared their opposition to this. I, however, agree with Kant, except that, according to my view presented throughout this treatise, the law of causality is one of the four modifications or forms of the principle of sufficient reason.
>
> On the same page of the *Critique of Pure Reason* cited above, Kant also provides a proof of the principle of sufficient reason that in essence is the following'.

67 In B, the sentence 'According to this, the order of succession of alterations…through the causal nature of these alterations' starts paragraph 2 of § 23. In A this paragraph begins as follows: 'It is first to be noted that this proof proceeds only from the law of causality and not at all from the principle of sufficient reason, which as I hope to prove, also has three completely different applications or forms. In any case, I agree with Kant that the law of causality in connection with the other categories, thus generally with the understanding, makes possible the totality of objective cognition that we call experience. (§ 42 explains this more thoroughly.) Except that, according to my view, the understanding does this only by unifying time and space through its categories, not through mere categories alone. Not experience, but only its laws, known *a priori*, are given to understanding: experience itself is the unity of space and time produced by the understanding and thus is to be grasped only through the *simultaneous* application of the understanding and sensibility. Therefore, I cannot agree that the order of succession of alterations of real objects is recognized as something objective solely through the category of causality'.

68 'Both are events…merely an empirically perceived fact' in B reads in A: 'Both are events: the only difference is that in the first case the alteration is between the immediate and the mediated objects, in the second, between two mediated objects’.

69 ‘If from the shore I stare at a ship passing nearby,…the real succession of the positions of my body relative to the ship’ added in B.

70 ‘just as τὸ συμβεβηκός comes from συμβαίνειν (cf. Aristotle, *Posterior Analytics* I, 4.)’ added in B.

71 ‘Indeed, even the succession of day and night…has not by custom misled anyone into taking them for cause and effect’ replaces in A: ‘Indeed, even that succession with which we compare all others, the rotation of the earth, is without a doubt known [*erkannt*] to us objectively, but certainly not through the means of the concept of causality, since its cause is completely unknown [*unbekannt*] to us’.

72 For ‘Kant says in the same passage’, A reads: ‘Kant says (pp. 242–3)’ [i.e. B242–243].

73 ‘…to distinguish the objective from the subjective, real objects from mental images’ through to the end of the paragraph in B replaces in A: ‘…to distinguish the objective from the subjective, real objects from mental images, which, as I have shown in § 22 [in A only, as given above], occurs in our being conscious of whether the presence of a representation is mediated through the immediate object, or, absent this mediation, called forth by choice as a mere repetition. In a dream, as has been said, where the immediate object is withdrawn from consciousness [*entrückt*], we cannot make that distinction; therefore, while we dream we take mental images for real objects, and only on waking (i.e. when the immediate object re-enters consciousness) do we recognize the error, although the law of causality asserts its authority in a dream as well’.

74 In A this paragraph reads as follows: ‘I cannot acknowledge as valid Kant's proof of the apriority and necessity of the causal law – that only by means of this law can we recognize the objective succession of alterations (insofar as the causal law is a condition of experience). However, I do agree with him that we are conscious *a priori* of the rules according to which alterations of events must follow one another, and I also agree with him about all the inferences which he draws from these rules. However, the proof of our being conscious *a priori* of the causal law seems to me already to lie in the unshakeable certainty with which everyone expects that the causal law would apply in any case of experience, i.e., by the certainty that we attribute to this law, a certainty distinct from every other certainty grounded on induction, e.g., the empirically known laws of nature. It is even impossible for us to think that somewhere in the world of experience this law might be subject to an exception. E.g. we could *imagine* that the law of gravity might cease to operate at some time, but not that this could occur without a cause'.

75 B omits a complete paragraph immediately preceding this paragraph. This paragraph, omitted in B, is as follows in A: 'However, there is certainly also a *proof* of the kind Kant wants, namely a demonstration that experience is possible only through the mediation of the law of causality. The demonstration goes as follows. Only *one* object is given to us *immediately*: our own bodies. Now there is no way to understand how we get beyond this representation to other objects in space, except by means of the application of the category of causality. Without this application we would have no other object than the immediate object, with its succession of states. Without applying the understanding at all, we would remain with mere sensation and never arrive at intuition – intuition being of objects, and not merely of perceivable [*wahrnehmbarer*] space and time, and being precisely the union of time and space, realized [*erfüllten*] through the categories. Nothing is given immediately except the immediate object in space and the succession of its states in time; indeed, even the immediate object itself is first given as an *object* through the applications of the categories of subsistence, reality, unity, etc. The cognition of *mediated* objects, however, now begins with the category of causality and proceeds from it. A cause is inferred from an alteration in the eye, ear, or any other organ, and the cause is posited at the point in space where its effect proceeds from, as the substrate of this power. Then the categories of subsistence, existence, etc., can first be applied to the effect. The category of causality is thus the actual point of transition, hence, the *condition of all*

experience, and as such, precedes experience, and is not first derived from experience. Through the category of causality we originally cognize the object as *actual* [*wirklich*], i.e., *acting* [*wirkend*] on us. That we are not conscious of this inference presents no difficulty: we are never conscious of the inference from the colour of the body to its shape. Moreover, it is no inference of reason [*Vernunftschluß*], no combining of judgements [*Urtheilen*]: we have nothing to do with the concept of the category,* but with the category itself. The category itself leads immediately from the effect to the cause; therefore, we are as little conscious of its function as that of the other categories, since precisely through these categories our consciousness changes from dull sensation to intuition. I would like to give the name of *inference of understanding* [*Verstandesschlusses*] to this inference. It is a type of inference that is not mediated through any abstract concept, and so not through any minor premise, and in logic it must be assigned to a species of inferences whose distinctive feature does not allow us to attribute to them an origin in a completely different intellectual power. To this type of inference, following the precise separation of understanding and reason which I advanced, the former designation [i.e. "inference of reason"] is not suitable. One can receive a palpable proof – in the most literal sense of the word – of the inference asserted by me, but so frequently denied (recently by Fries in his [*New*] *Critique of Reason* Vol. 1, pp. 52–6 and 290 and by Schelling in the first volume of his [*Philosophical*] *Writings*, pp. 237–8). If one lays the middle finger over the index finger and feels a ball with both, then one will believe with the greatest certainty that one feels two balls, and one can only convince oneself with one's eyes that it is only *one* ball. This remarkable illusion had already drawn the notice of Aristotle (*Metaphysics* III, 6 [IV, 6, 1011a, 33; cf. *On Dreams* I, 2, 460b, 20–25]). In this case, through the most reliable sense, in the most immediate way, one believes one perceives two balls, and indeed this certainty is founded simply on the inference which, expressed in concepts, would be as follows: if two spherical surfaces simultaneously affect the outside of the middle finger and the index finger, then these cannot belong to one ball; that is happening now; therefore, there are two spheres here – except that the alteration of the natural position of the fingers presupposed by the major premise makes the conclusion false.'

***** ‘Only after familiarity with the following chapter can this be completely understood’.

76 In A this sentence reads: ‘After all, the principle of sufficient reason is the expression of the necessity lying at the core of our cognitive faculty, of a connection among all of our objects, i.e., representations’.

77 In A two paragraphs immediately precede this paragraph. The two paragraphs, deleted from B, read: ‘That entire theory of Kant's ultimately rests on a false dilemma, namely: if representations succeed one another, then this occurs either by my choice [*nach meiner Willkühr*] or according to a rule. – This is false: for a succession can also occur according to a necessity which is not rule-governed. Such a necessity is of this sort: my body (as an object among objects and as subordinate to the causal law) has a passivity to external influences, the influences of countless objects, which (because of their common form in time) must be recognized by me in succession since I cognize my body itself in time.

> Finally, one could ask: if the objectivity of succession, i.e., that of change [*Wechsels*], is recognized simply from causality, from what will the objectivity of duration be recognized? For time is posited as a determination of representations owing to duration as well as to change, not only insofar as these are immediately present to my consciousness, but also insofar as they belong to the total representation of experience. It happens that we generally recognize time not only in reference to the former, but also to the latter (i.e. according to the usual way of putting it, we know time as a determination of real objects) because the immediate object, as well as any other, belongs to the world of objects, and successive alterations of these are given to us as immediately as the immediate object itself; but these alterations presuppose time, not merely as a form of representations, insofar as they are immediately present to me, but also within the total representation of an experience’.

78 In A the final clause of this sentence reads: ‘which, moreover, the proof given above, even in the manner desired by Kant, puts beyond all doubt’. To its end § 24 in A continues:

I completely agree with Kant that the perception of any succession of states of real objects is *accompanied* by the presupposition of a cause. However, I deny merely that a succession is conditioned through this. I agree with him that every event belongs to a series in which its place is determined through a rule, and hence is necessarily determined. Only I cannot grant that we discover the place of any event in time simply through this rule and from the event's place in one of these series; that is, I cannot agree that we are unable to recognize the place of an event empirically. For there are countless series of causes and effects, and the members of any such series have an objective temporal relation (i.e. one existing in the connectedness of experience) not only to one another in a given series, but also to the members of any other series, although they have no such causal relation. Now indeed, the temporal relation of any member to the remaining members of the *same* series is *a priori* knowable according to the causal law, and thus, it is certain that two members of the same series can never be simultaneous. However, the temporal relation of a member of one series to one of *another* series is knowable only empirically, through the fundamental form of time, which makes possible not only representations immediately present to the subject, but also all complete representations connected to the totality of experience, where each one must be simultaneous with many others. One can illustrate this by presenting time with content [*erfüllte Zeit*] in the image of a circular plane whose centre is the present and whose infinitely possible radii represent the infinitely possible series of causes and effects. Events are all conceivable points in this plane circle, each of which belongs to a conceivable radius. Empirically, by means of the intuition of time, we recognize the distance of any point from the centre and can then compare them, i.e., determine their places in time. According to Kant's doctrine we must discover the distance from the centre only along the continuum of the radius, so two points can only be compared if they lie along *one* radius, or rather, there must be only *one* radius in the circle. We see, however, that all possible points can be compared according to their distance from the centre and that simultaneous events can never be effect and cause of one another since they are necessarily represented by distinct points that lie on a *single* parallel circle and thus never along a *single* radius. I know quite well that absolute, pure time has only *one* dimension and, therefore, its image is a line: but here I am discussing time with content, in which, because of the strict union (or multiplication, as it were) between it and space that leads to a totality of experience, many things must be simultaneous. Moreover, in this image the direction of time can, as it were, be given a single designation, namely a centripetal one.

From Kant's theory that objective succession is possible and recognizable only through causal connection, another parallel follows: namely, that simultaneity is possible and recognizable only through reciprocal action. (*Critique of Pure Reason*, pp. 256–65 [B256–265].) It stands or falls with the first, only it is much easier to see through, and here is not the place for a separate refutation of it, especially since in disputing the other, I fear I have come to be too prolix.

It is futile to defend Kant's doctrine that I challenged above: it is not just erroneous, but is a profound error because it arose through the intellectualization of sensibility. As an attempt to prove the apriority of the causal law from the most irrefutable fact, it is a most brilliant idea, but for just this reason blinding – it is futile, I say, for anyone to want to defend it by asserting that Kant had in no way claimed that an event's following from its cause [*die Folge einer Begebenheit auf ihre Ursache*] is the *empirical* criterion of its reality and of the objectivity of its place in time, but only the universal condition of the possibility of real succession [*Succession*]; or that he did not say that in order to recognize a sequence [*Folge*] of representations as an event we must *perceive* its causal nexus, only that the causal nexus must be *presupposed*. I refute such a defence by referring to the whole passage, which I challenged, in which it is asserted that a sequence of representations can be distinguished from that which is merely subjectively given in our apprehension only by means of cognizing the necessary order according to the law of causality. That this order is the criterion for this distinction, one finds repeated in the most manifold ways, and with reference to the parallel theory of objective simultaneity it is said, pp. 258–59 [B258–259], ‘that the simultaneity of appearances which do not operate on one another reciprocally, but are somewhat separated by empty space, is not an object of possible perception’ [paraphrasing B259] (this would be an *a priori* proof that there is no empty space between the fixed stars); and p. 260 [B260] ‘that the light that *plays between* our eyes and the heavenly bodies' (an expression which slips in the idea that the light of the stars not only works on our eyes, but also that of our eyes works on the stars) 'effects a community between us and the latter and thereby proves the simultaneity of the latter.'

Every criterion is, after all, empirical, since it is always a mark [*Merkmal*], which, when it is found in a particular case, verifies that the case belongs under a rule or concept, and what occurs in particular cases is always empirical. – For an alteration to be recognized as objective, its cause does not need to be *perceived* (according to that supposed defence), but merely *presupposed*, so the unavoidable question arises: how is an *alteration* (i.e. a change of representations) recognized as one for which we must presuppose a cause? If Kant had merely wanted to say that the representations belonging to the class we are now considering follow one another and connect according to a law different from that of our concepts and mental images (later we will consider the law which these follow) and that this law consequently belongs to their character, then I completely agree. But if it is his opinion that recognizing to which class the representations belong requires recognizing the law governing the sequence of the representations, then I maintain the reverse: that it is only after we immediately recognize to which class some given representations belong that we know at the same time and *a priori* which law governs their sequence and connection. Indeed, I agree with Kant that complete representations making up the totality of experience are connected by causal nexus, but I simply deny that the objectivity of their sequence is recognized only through the causal nexus; whereas, in my view, time is not only the form of representations immediately present to us, but is the form of all complete representations that are connected into a totality of experience.

It is not without great reluctance that I have dared to produce objections to prominent [*hauptsächliche*] theory – taken as proven and even repeated in the most recent books – a theory of that man whose amazing profundity I respect and to whom I owe so much that is so important, that his spirit can speak to me in Homer's words:

> ‘I also removed the fog that covered your eyes.’
>
> [Άχλὺν δ᾽ αὖ τοι ἀπ᾽ ὀφθαλμῶν ἕλον, ἣ πρὶν ἐπῆ ν (*Iliad* 5.127)]
>
> That I nonetheless have dared to produce these objections, Plato's words may excuse: ‘for we are not to honour a man before the truth’ [Οὐ γὰρ πρό γε τῆς ἀληθείας τιμητέος ἀνήρ] (*Republic* 10 [595c]) and ‘it often happens that the dimmer vision sees things in advance of the keener’ [πολλά τοι ὀξύτερον βλεπόντων ἀμβλύτερον ὁρῶντες πρότερον (πρότεροι) εἶδον] (*ibid*. [596a]), and finally, Herder's maxim: ‘error perishes; truth endures.’ [*Gott: Einige Gespräche*, Drittes Gespräch, Theophron (*God: Some Conversations*, Third Conversation, Theophron).]
>
> And finally, even if my objections are based on error, since the same could deceive others, my objections might perhaps have the use of giving rise to a clearer presentation and firmer foundation for this very brilliant doctrine. This may also be said with reference to the refutation of Kant following in § 26.

79 § 24 in B bears the title of § 25 in A, and B eliminates all of the material of the former § 25. In A, § 25 reads as follows:

§ 25 On the misapplication of the law of causality

As has been said, the law [*Gesetz*] of sufficient reason of becoming now under consideration is universally valid [*allgemeingültig*] and governs without restriction the world of real objects, i.e., governs complete representations connected in the total representation of experience. Our own body is also such a representation or object among objects, as has been mentioned often enough; therefore, it too is completely subject to the law of causality. But I still must repeat that between object and subject there is the greatest of all conceivable distinctions. Everything cognized is object; that which cognizes is subject, which for that reason, insofar as it cognizes, is never cognized (cf. § 42 [in A]). The relation between object and subject is such a necessary one that without it both are inconceivable. But cognition of the law governing this relation is impossible because all cognition presupposes this relation insofar as cognition applies to objects and, therefore, is possible only given this relation. But whoever applies to the subject the laws which apply to the world of objects (i.e., the laws of pure sensibility and of the understanding which Kant has proven to be known to us *a priori*) makes a transcendent use of the laws, going beyond the bounds of the laws' validity; consequently, he applies the laws valid for objects of experience to that which cannot at all be an object for the subject of cognition. Not only common understanding but also speculation lapsed into this mistake by applying the law of causality to the subject just as to the object, and thereby arriving at two opposing assertions which became the bases of two opposing systems. According to the first, the representation arises through the causality of the object; thus, the subject is passively subjected to the law of causality. This is the basis of *realism*. – According to the second, the representation arises through the causality of the subject: thus, the subject is actively subject to the law of causality. This is the basis of *idealism*.*

80 § 25 in B bears the title of § 26 in A, and B eliminate virtually all of the material of the former § 26. In A, § 26 reads as follows:

* With regard to what is considered here, we improve nothing by positing an absolute I in place of the subject. For above all this absolute I is subject, and, thus, cannot stand under laws valid for certain classes of objects, since objects are present only with the subject and for the subject.

[On the bottom margin in his copy, Schopenhauer included the handwritten remark 'The law of relation is the transference [*Übertragung*] of a sensation to an object as its cause'; see Hübscher *SW* 7, 136].

§ 26 The time of an alteration

As we have seen, the principle of sufficient reason of becoming applies only to *alterations*. Even if it is not strictly germane, I cannot now refrain from saying something about an issue touched on by many philosophers, namely the *time in which alteration takes place*. On this issue Plato and Kant in particular stand in direct contradiction. For Plato (*Parmenides* p. 138 [156d]) asserts that an alteration occurs *suddenly* and fills *absolutely no time*. By contrast, Kant expressly says (*Critique of Pure Reason*, p. 253 [B253]) that an alteration occurs *not suddenly*, but *in a time*. Schelling, too, in *System of Transcendental Idealism*, p. 299, says something relevant here, which, however, is too closely connected with the system presented in that work for me to be able to go into it here, so I must be satisfied with just a reference to it.

I think it best to reveal my judgement on this subject with an examination of Kant's law of *continuity of all alterations*. What Kant says about this belongs with the above-mentioned passage I recommended for re-reading and is found on pp. 253–6 of the *Critique of Pure Reason* [B253–256].

Put briefly, Kant's proof of the continuity of all alteration is this: ‘Since there is no smallest possible part of time [*Zeittheil*], then between two moments there is always a time, and thus there is also a time between states which fill time and follow one another. This is *the time of alteration*: in this time of alteration, the cause works continually, and the new state arises gradually in this time of alteration, emerging through all degrees of reality’ [paraphrasing B254].

Against this I say: 1) there is no time between two moments; even between two centuries there is no time since in time as in space there is a clear boundary that we intuit *a priori*, although we are no more able to present it in filled time than in filled space (in which no line can be drawn without breadth). 2) Time is a continuous quantity [*Quantum continuum*] and not discrete [*discretum*]. Now since empty time is imperceptible and would abolish the complete unity of our experience, there must be an appearance in every part of time and, thus, a series of appearances must be a continuum. Furthermore, because all appearance consists of objects, the states of which change [*wechseln*], and, indeed, as was acknowledged above, only insofar as a state always follows from one preceding it, the states must also be a continuum; i.e., one state in time immediately borders on the other from which it follows. Thus the *continuum* of time is filled through the continuum of states, which, in order to follow from one another, can have nothing between them. Thus, for this reason, contrary to what Kant says, there is no time of alteration. Alteration is not a thing in time; rather, it is a mere comparative concept [*Vergleichungsbegriff*], existing only in our reflection as the idea that there is now a state which was not previously, and that previously there was one which is not now. However, a discrete quantity [*Quantum discretum*] must be distinguished from a distinct quantity [*Quantum distinctum*]. A discrete quantity is a magnitude, the parts of which are separated by something completely different from them in kind [*toto genere*], thus not belonging to the whole magnitude. Its opposite is the continuous quantity. A distinct quantity, however, is a magnitude, the parts of which, although as such homogeneous in kind [*in genere*], are still specifically distinct from one another. Its opposite is the univocal quantity [*Quantum univocum*]. Now something can be a discrete quantity and still be univocal; e.g. a row of trees. So, too, something can be a continuous quantity and still be distinct: an example of this is a series of states. If between any two states there were something not belonging to them, but which like them filled time, something that Kant calls an alteration, then the series of states would not be a continuum, but discrete and distinct. Although this sequence is now a continuum, i.e., a state on which another follows immediately, it is also a distinct state, i.e., this state is specifically different from others.

However, the duration of a state is often so brief that we do not perceive it because of the limited acuity of our senses, and other imperceptible states can often lie between two states whose duration is sufficient for them be perceptible, where the first of the two states is perceived as cause of the second, and the second is perceived as effect of the first. So we posit the first of the two perceived states as cause of the second – even though it is not. In practical life, however, this leads to no problem because, as cause of the intermediate state, it is the mediated cause of the second, perceived state. But to think of the time filled by these states that are of too brief duration to be perceptible as occupied not by a state [*Zustand*], but by something completely different called an alteration, conflicts with the law of causality, according to which a state can only arise when the state immediately preceding it contains the conditions for it. But then again according to this law, when a time appears to pass between the cause and effect, we can infer that there are states which are of too brief duration to be empirically cognized as discrete. Thus there is no alteration in time, but mere states, and since these states must immediately border on one another, there is no continuity of alteration, but a *continuity of states*, which is already self-evident, since alteration is nothing but a concept arising through a reflective act of comparison: for continuity can only have a quantity [*Quantum*], i.e., a magnitude in space or time, but a concept cannot have a magnitude in space or time.

That alteration takes no time can be proven from *a priori* concepts, as has been shown to this point, but it can also be intuited *a priori*, although this is only possible through a unique alteration which can be constructed merely from pure intuitions of space and time. This alteration is the transition from rest to motion and from motion to rest. Given that this alteration can be intuited *a priori*, I can establish as an axiom the fact that between the moment when a point in space rests and that in which it moves, there cannot be a third in which it does neither, but does alter its state.

For this reason, an alteration would be something that is not in time, but of which we have a concept only by means of time. As I have said, Plato, whose opinion agrees with my result [*Resultat*], says that for this reason an alteration is sudden [ἐξαίφνης], which he calls a thing of odd nature, being in no way in time [ἄτοπος φύσις ἐν χρόνῳ οὐδὲν (οὐδενὶ) οὖσα]. He could as well have called it a timeless being [ἄχρονος φύσις]. There is, however, still something equally odd [ἄτοπον] that, although it has meaning only in time, still fills no time. This is the *present*. It is the clear border between the past and the future. Duration is to time what extension is to space. Just as a border in space is without extension, so the present is without duration. Consequently it fills no time and, thus, is *never*. Nonetheless, the present exists throughout our entire life. From this last fact it is clear why we treat the present with great seriousness, no matter how trivial its content. And the mass of trivialities that fills the greatest part of our lives is always treated with a dignity that is quite strange and, to those who are reflective, laughable, because it is – *present*. Whoever can achieve this reflection changes from a laughable person to one who laughs – a laughing Democritus. Perhaps this timeless quality of the present admits of a kind of explanation, in that it is only through time that it attains significance. For, as the form of inner sense, time is that in which *all objects* must appear; but the *subject*, which can never be object, never enters this form, and the present is the point of contact between the subject and the object. – Furthermore, just as the present, despite its timelessness, is conditioned through time, so, conversely, time is conditioned by the present, since we must think of any time as past or future, thus always in relation to the present.

81 § 27 in A bears a similar title to § 26 in B, but reads entirely differently, as follows:

* It is entirely superfluous to note that among animals, by innumerable gradations, the understanding is duller and the sensibility sharper than among humans. Then among humans, there are also those of sharper or duller understanding, just as there are those of sharper or duller senses. Those who perceive the relations and connections of things more clearly and with greater versatility and thus are in a position to apply their reason to more complex combinations have sharper understanding.

§ 27 Explanation of this class of objects. Reason

The second class of possible objects for our faculty of representation is made up of *representations of representations*: these are concepts, combinations of which are *judgements*, which can again be combined; this occurs when a judgement is based entirely on one or two others through the principle of sufficient reason; the result, then, is an *inference* [*Schluß*].

The class of representations considered in the previous chapter belongs not only to humans, but also to animals, and concerns merely sensibility and understanding.* The class of objects to be considered now, however, belongs exclusively to humans and the faculty for objects of this class is *reason*. *Thus reason is the faculty of representations of representations or concepts*. Therefore, concepts are not at all to be confused with the functions of the understanding, the categories, which unify space and time to create that which is perceptible; concepts are especially not to be confused, as often occurs, with the category of unity, which unifies the manifold of all sensible intuition. However, just as sensibility cannot comprehend what causality is, or the understanding cannot comprehend what temporal sequence and position are, so both together are unable to grasp what a concept is; i.e. there can be no intuitive representation of the nature of a concept, but the nature of it is only conceivable through concepts themselves, and put simply, a concept is a representation of a representation. – Further, reason is also the faculty for the combination of concepts, thus of *judgements*, and through the connection of these, in the way indicated above, of *inferences*. The presence of this class of representations, and thus the activity of reason, is *thinking* [*Denken*] in the proper sense of the word. I know that this explanation of reason and of concepts varies greatly from all previous ones and that understanding and reason have never been so very clearly distinguished from one another as occurs through this explanation of reason and that of the understanding given in § 19. All other explanations familiar to me have always seemed to me to be as unsatisfactory as they are vague. – This entire chapter, but especially § 33, contains the corroboration of what is given here, and in § 58 may also be found a defence of it, which appears to be necessary insofar as Kant designated with the name practical reason something totally different in kind [*toto genere*] from reason.

Complete representations (i.e. real objects), be they intuited through the immediate object or through repetitions spontaneously recalled (i.e. mental images), are always particular representations; this is so even of the representations of the two classes still to be discussed. *Concepts*, however, are always general because, as mere representations of representations, they cannot contain everything contained by the representation; i.e. they are not so thoroughly determined. But for just this reason, concepts must be representations of many representations, the differences among which are at the same time left undetermined. Thus any concept is general and has a sphere. Concepts depend on language to be preserved and communicated, since otherwise they would not be fixed. In turn, language depends on concepts because language is nothing more than their tool. Proper names, which do not refer to concepts, but refer immediately to particular objects, are an exception to this and actually belong to no language. Because they indicate no concept, they are easily understood by animals.

82 In § 27 of B bears the same title as § 28 of A.

83 This paragraph is added in B.

84 The opening of the second paragraph of § 27 in B incorporates material from the opening of the single paragraph in § 28 of A. In A, that material reads: 'But precisely because concepts contain less than the representations of which they are in turn representations, they are easier to handle than these representations and are related to them in somewhat the same way as the formulae of higher arithmetic are related to the operations of thought, from which the formulae are derived and which they represent. From the many representations of which they are representations, they contain exactly the parts which are needed; if instead one wanted to bring representations to mind through the imagination, one would have to drag along a load of inessentials, as it were, and one would be confused by these; as it is, however, by applying concepts one thinks of only the parts and relations of all these representations that are needed for the task at hand'.

85 This sentence comprises the remainder of § 28 in A. Schopenhauer added the intervening material to the equivalent § 27 of B, as well as the references following this sentence to Aristotle and the medieval fight between the nominalists and the realists.

86 § 29 in A corresponds to § 28 in B, but as a single paragraph, reads as follows:

§ 29 Representatives of concepts

As has already been said, a concept is not at all to be confused with a mental image, which is a complete and particular representation neither brought about through the immediate object nor belonging to the complex of experience. However, a mental image is then also to be distinguished from a concept when a mental image is used as a *representative of a concept*. This occurs when one wants to have the representation itself that the concept is a representation of, and that corresponds to the concept. This is always impossible, as, e.g., there is no representation of ‘dog’ in general, of ‘colour’ in general, of ‘triangle’ in general, of ‘number’ in general – no mental images corresponding to these concepts. As soon as one calls up the mental image, e.g., of some dog, it must, as representation, be thoroughly determined, i.e., of some specific size, a definite form, colour, etc. since the concept that it represents has no such determining characteristics. However, with the use of such a representative of a concept, one is always aware that the mental image does not adequately represent the concept, but is a wholly arbitrary determination. (See the note to § 40 on Platonic ideas.) What is said here is obviously in conflict with Kant's doctrine in the chapter on schematism (*Critique of Pure Reason*, pp. 176–81 [B176–181]). Only inner observation and clear deliberation can decide the matter. Hence, one should investigate whether in one's concepts one is aware of a ‘monogram of pure *a priori* imagination’ [A142/B181], e.g., when one thinks of dog, one is conscious of something between dog and wolf [*entre chien et loup*], or whether, according to the explanations put forth here, either one thinks of a concept through reason, or by way of imagination represents [*vorstellt*] as a complete image some representative of the concept [*einen Repräsentanten des Begriffs*].

87 At this point in A there is a short section, entirely omitted from B. It is as follows:

§ 30 Truth

Concepts are of no other use than for judgements. Judgements have no value, except insofar as they are *true*. To say that judgement is *true* means that it has a sufficient ground. This must be something distinct from the judgement to which it relates. *Truth is thus the relation of a judgement to something beyond it*.

88 § 29 of B bears the same title as § 31 of A, but § 29 of B incorporates little from A. In A § 31, reads as follows:

§ 31 The Principle of Sufficient Reason of Knowing

Thus our principle appears here again as the principle of *sufficient reason of knowing*, *principium rationis sufficientis cognoscendi*. It receives this name as it is the guide to knowledge.

> A judgement that has absolutely no ground is not true; it has arisen out of no knowledge. Truth, as has been said, is the relation of a judgement to something beyond it, whereupon it is based or rests and for which, then, in German language [*im Teutschen*] the name *ground* is well-chosen. However, the grounds upon which a judgement can rest are again of four types, and the truth which each of these contains is a different one. These four types of truth are presented in the next four sections.

89 § 30 of B is equivalent to § 32 of A and bears the same title.

90 The opening paragraph in § 30 of B expands and alters the first paragraph of § 32 in A. The opening paragraph of § 32 in A reads as follows: ‘A judgement can have another judgement as its ground. Its truth then is *logical* or *formal*. Whether it also has material truth remains undecided and depends on whether the judgement that supports it has material truth or the series of judgements on which it is grounded rests on a judgement of material truth. This grounding of one judgement on another is always subsumption of concepts; therefore, the form of an *inference* [*eines*

Schlusses] arises when it is clearly presented. Since an inference, which is the derivation [*Zurückführung*] of one judgement through another, always concerns only judgements and these are only combinations of concepts, which are the exclusive objects of reason, inferring is correctly explained as the unique business of reason'.

91 In B 'laws of thought' [*Denkgesetzen*] replaces in A 'principles of thought' [*Grundsätzen alles Denkens*] with corresponding changes from 'principles' to 'laws' in the remainder of the paragraph. Otherwise, the second paragraph of § 32 in A is virtually identical to the second paragraph of § 30 in B.

92 § 33 of A corresponds to § 31 of B, with the same title, but in A is much longer. § 33 of A is as follows:

§ 33 Empirical truth

An experience can be the ground of a judgement: then the judgement has *material* truth, and indeed this is *empirical truth* insofar as the judgement itself is *immediately* grounded on experience.

> To say that a judgement has *material* truth generally means that its concepts are connected and qualified [*modificirt*] in the same way that the representations in experience (which they represent) are mutually connected and are qualified in relation to the whole. Thus, there must be just as many types of connection and qualification of concepts as there are types of connection and qualification of representations in the totality of experience. Here we have the actual reason why nothing other than the *table of judgements* could provide the correct clue to the discovery of the *categories* [*Critique of Pure Reason* A67/B92–A83/B104]: because for every function of our understanding that connects representations to a totality of experience, we must have a corresponding form for the combinations of concepts (i.e. for representations of those representations). And because we can function in this way, we certainly

have reason, i.e., the faculty not only for complete representations and for their connections to the totality of experience (which animals also have) but also the faculty (like a higher power) for representation of these representations and for any corresponding connections found in the totality of experience – that is, a faculty for concepts and judgements, which animals lack. General logic stands in the same relation to reason as transcendental logic stands to the understanding, which is why the former has quite correctly been called the doctrine of reason. The forms of general logic must therefore provide directions for discovering transcendental logic. But considered precisely, this applies only as far as general logic examines the possible connections and relations that concepts have in judgements and also examines categorical judgements connected with one another in a hypothetical or disjunctive judgement, an examination that corresponds to that undertaken by transcendental logic concerning the possible connections of forms of sensibility made perceptible through the categories. In the case of inferences, however, it is judgements *themselves* that are the object to which the principle of sufficient reason (i.e. the universal principle of dependence) [*dem universalen Princip der Dependenz*] applies, not merely the representations of representations which are the concepts contained in the judgements. Consequently inferences are no longer related to the understanding or to transcendental logic; rather, they remain completely and exclusively in the realm of reason and of general logic.

As the faculty of concepts and judgements in general, reason must also be as Kant described it: the faculty of *a priori* principles. For principles can only be put forth abstractly [*in abstracto*], that is, only by reason, even when they have arisen from the understanding or sensibility. No doubt Kant's having put forth this characteristic of reason also led him to find the origin of the moral law in reason (hence it is here called practical reason), particularly because, not respecting the immense distinction between knowledge of what must be and cannot be otherwise and what *should* be, he considered this moral law to be an *a priori* principle, since it is not taken from experience. – Furthermore, because of this ability to establish principles *a priori* in the abstract [*a priori in abstracto*], along with the ability to draw inferences, and because reason, unlike understanding, is not immediately bound to sensibility, reason is led to what Kant called its *ideas*. From metaphysical principles, following the guidance of pure sensibility (which goes on to infinity), but at the same time also following the guidance of the unifying understanding (which creates the totality of experience), reason makes inferences over and over again, while at the same time it seeks the totality and resolution of the infinite series of inferences.

The faculty which we have now clearly described is nothing other than *reason*. It not only makes science possible, but also has incomparably greater value in that it gives us the ability to *guide our actions by concepts* and not, like the animals, merely by *particular representations*. For this reason, we call *a rational action* one that follows from concepts, without regard for and independent of the chance, particular representations which may be present in our consciousness. The possibility of these sorts of actions is a condition of freedom, and the animal, lacking concepts, is completely given over to the desire or the affect which has just taken hold of it. However much the presence of representations may change and solicit our will, for us the *unalterable concept* remains. Furthermore, since through its concepts reason makes possible an overview of our whole lives and their events, it is the condition of the equanimity and steadfastness with which some people bear the misfortunes and setbacks of life, people whom some like to call practical philosophers, although this steadfastness says nothing about their morality. Finally reason and concepts are the conditions for all reflection, scheming, and premeditation through which all so-called great undertakings and all great misdeeds come about. With regard to all its connections to our actions, reason may now be called *practical*, but not with the meaning Kant advanced, which has since been universally applied. A more precise explanation follows in § 58.

93 § 32 in B is equivalent to § 34 in A; however, § 32 in B bears a different title from § 34 in A, substituting here, as throughout B 'transcendental' for 'metaphysical'. § 34 in A reads:

§ 34 Metaphysical truth

The conditions of all experience can be a ground of a judgement, which is then a synthetic *a priori* judgement. Such a judgement also has material truth and, indeed, *metaphysical truth*. For the judgement is determined through just that which determines experience itself: namely, either through the *a priori* forms of pure sensibility intuited by us or through the categories of the understanding known to us *a priori*. Such judgements are, e.g., the following: two straight lines do not enclose a space – nothing occurs without a cause – 3 × 7 = 21 – there is no intermediate state between rest and motion. –

94 § 33 in B is equivalent to § 35 in A, and both bear the same title.

95 After ‘the truth of which is then of a kind’ A reads ‘for which I feel compelled to make up a new expression: I call it *metalogical* truth’. The reference to John of Salisbury's *Metalogicon* is added in B.

96 ‘of metalogical truth’ is added in B.

97 The metalogical truth given in B as ‘2) A predicate cannot at the same time be attributed to and denied of a subject, or a = ∼a = 0’ reads in A as ‘2) A predicate cannot belong to a subject that it contradicts, or a = ∼a = 0’.

98 The metalogical truth given in B as ‘Truth is the relation of a judgement to something outside itself, as its sufficient ground’ reads in A as ‘Truth is the relation of a judgement to something outside it. This latter is precisely the principle of sufficient reason of knowing’.

99 Where B reads ‘we then find that to think contrary to them is of as little avail as it is to move our limbs against the direction of their joints’, A has: ‘just as through experiments we only become acquainted with the possible movements of the body, exactly as we become acquainted with the properties of any other object’.

100 ‘E.g. if we were to attempt…could not bring it to consciousness in a subjective way’ is added in B.

101 ‘I mean to say matter’ is added in B. Schopenhauer also omits from B the following note in A after the end of the paragraph:

> ‘*Note*: it is to be noted that the relation of the ground of cognition to the consequent yields material for a hypothetical judgement only in the case where the ground is a judgement: but what is implicit in the concept of a hypothetical judgement is that it is the combination of two judgements as ground and consequent.’

102 § 34 is added in B and has no equivalent in A.

103 § 35 in B corresponds to § 36 in A, bearing the same title.

104 In B two sentences, ‘What distinguishes this class of representations…’ through to ‘but first comes to consciousness with and in the material part of cognition’ replace in A: ‘But then, the conditions of the totality of representations of an experience that reside in the understanding – the categories – are not objects for the faculty of representation by themselves and separately, but are so only in the representations of which they are the conditions, and so concretely [*in concreto*]. Only through abstraction can a concept of them, i.e., a representation of a representation of them, be obtained, but a representation of them is impossible’.

105 § 36 in B corresponds to § 37 in A, bearing the same title.

106 In B ‘These relations are unique…’ through to ‘…cannot be made intelligible any other way than by means of intuition’ replaces in A: ‘These relations are specific, completely different from all other possible relations of our representations, and therefore the understanding is not capable of grasping them, but simple intuition alone can do so; what is above and below, right and left, back and front, absolutely cannot be comprehended by the understanding’.

107 In B two sentences, ‘In many cases…’ through to ‘as well as the judgement which this expresses’ replaces in A: ‘I now turn to the general and abstract statement of this law'.

108 § 37 in B corresponds to § 38 in A, bearing the same title.

109 In B 'transcendental'; in A 'metaphysical'.

110 § 38 in B corresponds to § 39 in A, bearing the same title.

111 Where B has 'the words of which only serve to mark the individual steps of succession; hence, all of arithmetic teaches absolutely nothing but methodical abbreviations of counting' A reads 'all of arithmetic'.

112 § 39 in B corresponds to § 40 in A, bearing the same title.

113 In B 'mere concepts'; in A 'the understanding'.

114 In B 'real things'; in A 'complete representations'.

115 The quotation and citation of Aristotle's *Metaphysics* is added in B.

116 In B 'thus, the logical truth, not the transcendental truth of the theorem, is demonstrated'; in A 'thus a logical ground of the judgement, not a metaphysical ground, is provided'.

117 In B 'But this, which lies in the ground of being and not in that of knowing'; in A 'This, however, is the ground of being and not of knowing'.

118 Two sentences, 'In this case, the feeling is similar…insofar as it works in a platinum crucible' added in B.

119 The final paragraph, 'However, I cannot refrain…in *The World as Will and Representation*, Vol. 1, § 15 and Vol. 2, ch. 13', and Fig. 6 are added in B.

120 § 40 in B corresponds to § 41 in A, bearing the same title.

121 '…is one quite special, but very important: for everyone it' is added in B.

122 In B '*the subject of willing*' [*des Wollens*]; in A '*the subject of will*' [*des Willens*].

123 § 41 in B corresponds to § 42 in A, bearing the same title.

124 The opening three paragraphs of § 41 in B replace the opening paragraph of § 42 in A, which reads as follows: 'The subject is cognized only as *something that wills*, a spontaneity, but not as *something that cognizes*. For the representing I, the subject of cognition can never itself be a representation or object, since as a necessary correlate of all representations, it is itself a condition. *Therefore cognition of the cognizing is impossible* which can be explained in the following way. Any instance of cognition yields upon its occurrence a synthetic proposition, be it *a priori* or *a posteriori. But the proposition* '*I cognize*' *is an analytic proposition* because cognition is a predicate inseparable from I and always assumed with it (i.e. with the subject of cognition and judgement). And in fact, the subject of any analytic proposition does not arise through synthesis, but is in the strictest sense original, something given as the condition of all representations. To be the subject means nothing more than to cognize, [in his copy, Schopenhauer adds the note: 'On p. 112 a willing subject is also discussed' – i.e. in § 43 of A; see Hübscher *SW* 7, 136] just as to be an object means nothing more than to be cognized. Thus a cognition cannot be cognized because for that would be required that the subject itself be separate from cognizing and yet still cognizing the cognition, which is impossible, not only because it is a self-contradiction, but because the entire essence of the subject as such is cognition, from which, therefore, it cannot be thought of as separate'.

125 In B, the sentence in the penultimate paragraph 'Also, traces of this insight are to be found in that amazing mix of profundity and superficiality

– in Aristotle – as one can often find in him already the seed of critical philosophy' through to the end of the section replaces the following in A: 'If the identity of the subjective and objective asserted by the philosophy of nature means nothing but this indifference, then I completely agree with it; however, I doubt that it only means this because arriving at this requires no intellectual intuition [*intellektuale Anschauung*] but only mere reflection. Thus if for this reason one wants to call two things one, because one absolutely cannot be thought of without the other, I have no quarrel with it, since when there is agreement one can be flexible about words [*re intellecta in verbis simus faciles*], although I do not recognize as a necessary relation anything which is the single predicate of the two things related. But other things too (e.g. cause and effect, father and son, brother and sister) stand in just such a relation – things which *as such* can only be thought of together, each having its meaning only through the other and otherwise having no meaning. But for this reason these are not called one, but two, which is as much as to say that when given concretely [*in concreto*], these always have other predicates too. If one now says that sensibility and understanding no longer exist or that the world has ended – it is all the same. Whether one says that there are no concepts or that reason is gone and now there are but animals – it is all the same.

It is noteworthy that failure to recognize the relation that was just discussed has given rise to two great controversies, perhaps still not resolved, which could still be settled satisfactorily through insight into this relation. First there is the dispute between the old dogmatism and the Kantians, or between ontology and metaphysics and the Transcendental Aesthetic and the Transcendental Logic, a dispute which rests on the failure to recognize this relation when considering the first and third classes of representations that I have advanced. And second, there was, throughout the middle ages, the dispute between the realists and the nominalists which rested on the failure to recognize this relation when considering the second of our classes of representation.

If one *imagines away* all *forms* or *determinations* of being an object [*des Objektseyns*] and consequently those of cognition or being the subject [*Subjektseyns*] – I do not mean, if one *abstracts* – this would be imagining away their differences and would yield the general concepts of object and subject – rather, if one *imagines them away*, i.e., thinks of object and subject without them (a thought that cannot actually be completed, only attempted), then on the one hand there are no definite powers of cognition, and on the other hand there are no definite classes of representation. However, it happens that nonetheless something of both remains – an *x* and a *y*. For there remains something which is neither time, nor space, nor the understanding which unifies them, much less reason, which presupposes that these and their combinations already exist; rather, there remains on the side of the object what was presupposed in our outline of the analysis of experience, the perceptibility of all of these forms – matter; and on the other side that which perceives matter, the cognizing *subject without any further determination* of the nature of its cognition. As I have said, this thought cannot be completed because with matter one always thinks of space, and with the cognizing subject one always thinks of time. Now I call these two *x* and *y* because the one becomes too dark, the other becomes too bright to be cognized. However, this much is obvious, that our investigation does not rigidify [*erstarrt*] in a thing in itself, because these two, exactly like all of their determinations and forms that we just imagined away, can only be thought of, can only have meaning, in relation to one another and without this relation disappear. If for this reason one wants to call them one, then I will agree, but with the added stipulation explained above. But an intellectual intuition of the absolute identity of both, which places them under the category of unity, would have the advantage of leaving one unknown quantity instead of two. However, lacking such intuition, and moreover, given that the category of unity (or any category) cannot be applied to that which is not an object, we have here reduced the phenomenon of consciousness to its original nakedness, appearing as subject and object, still only imperfectly comprehended and avoiding our effort to fix it. We can provisionally dismiss the question of why there is this appearance of subject and object at all with the answer that the principle of sufficient reason (and thus also this question, which is only authorized by it) presupposes subject and object, indeed even presupposes their forms and laws. I will surmise that a completely different area of philosophy from the one that the present essay belongs to could provide us with, not so much an answer to this question, as

> something that renders the question superfluous and satisfies us in a completely different way.
>
> Just above we saw which controversies had arisen through the failure to recognize the true relation between the subject, made determinate by sensibility, understanding, and reason, and the object corresponding to it under these determinations. So too this failure to recognize all the determining factors in the relation between subject and object engendered idealism and realism, the former imagining that it can think of a subject [*ein Subjekt*] without object, and the latter an object without subject.’

126 § 42 in B corresponds to § 43 in A, bearing the same title.

127 ‘Nonetheless, since we have….’ through to ‘Beginning with cognition, one can say that’ is added in B.

128 At this point, A has the following sentence, omitted in B: ‘However it [the proposition ‘I will’] is most likely the first of all empirical propositions [*Erfarhrungssätze*] in each person's consciousness, the one with which knowledge [*Erkennen*] begins’.

129 ‘If we introspect…’ to the end of the first paragraph is added in B.

130 In B ‘is the knot of the world and therefore inexplicable’ replaces in A: ‘is absolutely inconceivable’.

131 This third paragraph is added in B.

132 Parts of § 43 in B correspond to parts of §§ 44 and 45 in A, and in B, § 46 of A is eliminated. In A §§ 44, 45, and 46 read:

* Reference to the morality of actions changes none of this. For moral maxims pertaining to moral actions are not motives, but a general expression for certain classes of motives. When Arnold von Winkelried

embraces the enemy's spears, the motive of his action is the peril to his fatherland which he wants to prevent. The maxim of not in general putting his own well-being before the common good, or that of another (a maxim that need in no way be recognized abstractly [*in abstracto*] by the actor), is just an expression of the attribute common to many motives, and in this connection the subject who is determined by motives with this attribute is called *good*. – Whoever retains an entrusted deposit, has as motive the view that wealth promotes his well-being. The maxim of promoting his well-being in this way only expresses the attribute common to many motives. The subject whose actions result from motives which bear this character, is called *evil* [*böse*]. He need not at all be conscious of the maxim for this as an abstraction [*in abstracto*].

** This qualification applies when, as above, the subject of willing is presented as an object of inner sense.

§ 44 Willing

Precisely because the subject of willing is immediately given in inner sense, what willing is cannot be further defined or described. One could point to something that willing has in common with other states and with which we are familiar from other states, e.g., alteration and causality, but insofar as what is essential to willing is found nowhere else, willing cannot be subsumed under any other concept. For this reason, what willing is, we can – even must – presuppose to be known. In order to understand willing better, we shall introduce some states related to it, but not to be confused with it.

> *Acting* is not willing, but the effect of willing when it becomes causal. The external conditions of willing's becoming causal are called *ability* [*das Können*]. What is called *wishing* [*Wunsch*] is willing as long as it has not become causal, because it is opposed either by external conditions or by the same subject's willing something else. Among many opposing wishes, the one which becomes causal is contrasted with the others by its being

called willing *par excellence* [κατ᾽ ἐξοχήν], and an act which imparts causality, if not immediately and actually [κατ᾽ ἐντελέχειαν] then potentially [κατὰ δύναμιν], is called a *decision*. The wishes that oppose the wish that is raised to the level of willing remain as wishes. If they have more moral value than the one that becomes willing, they are customarily called *pious hopes* [*fromme Wünsche*] – expressing the reproach that what remained a wish should have become a willing, and what had become a willing should have remained a wish.

§ 45 Law of motivation

It is a fact that with respect to what comes after it [*a parte posteriori*] willing falls under the law of causality because it causally affects real objects, one of which is the immediate object of cognition – the body, which is also an immediate object of willing. But under what law does willing fall with respect to what comes before it [*a parte priori*]? Does it necessarily follow from a preceding state, according to a rule? or is it a faculty that by itself initiates a series of states? This is the ancient dispute about freedom.

With every observed decision of others, as well as our own, we regard ourselves as justified in asking, 'Why?'; i.e., we presume it to be necessary that there was something preceding it, from which it followed, which we call the ground, or more precisely, the motive for the action now resulting. However, in all of our actions, we have the most vivid and often the most uneasy awareness [*Bewußtseyn*] that a firm decision had to follow from none of the states of representation among the three classes cited above, but that, if not as a wish, at least as a decision, it only depended immediately on the subject of willing itself; but only the willing itself can be perceived by the subject of willing, not the state preceding that willing. Thus we see here that the law of causality does not apply to the will, since according to this law any state always follows necessarily from a preceding state. However, because we nonetheless presuppose that there is a sufficient reason for any decision of our own as well as of others, a specific form of the principle of sufficient reason must govern here, which I call *principle of sufficient reason of acting*, *principium rationis sufficientis agendi*, or more briefly put, *law of motivation*, and I call the ground that is presupposed by this law the *motive*.

§ 46 Motive, decisions, empirical and intelligible character

If we have to indicate the motive of a decision, then we indicate the states of representations, either of the complete representations comprising the totality of experience, where a motive must be a relation among objects, or the concatenation of judgements that ultimately must have reference to some real objects, i.e., ultimately must have material truth if they are to *provide* a motive.* In these connections, error reigns: to avoid this requires good sense. Since good sense is distributed in unequal measure, it occurs that the same conditions of real objects provide very different judgements, and so different motives. But apart from this, following any explanation of motives we are aware of their inadequacy: at most they motivate wishing, but not a decision, which is the act of will proper. Therefore we must view the decision either as something completely unconditioned, subject to no rule, or we must presuppose a state of the subject of willing as a necessary condition for the decision, a state that we are never able to observe, since the *subject of willing* is cognized just in willing (i.e. in the individual acts of will), but not in any preceding state.** For, indeed, the *wish* precedes the *decision*, but is itself already a willing, and nothing is explained by saying that of two opposing wishes, the stronger will become a willing through a decision, for just why the willing subject so strongly wishes this or that must be considered either to be completely anomalous [*regellos*] or to proceed from a state of the subject of willing, but this state is not observable; it is not an object of inner sense, thus *not something in time*. After all, just like the present, a decision occupies no time: just as the present is related to the subject of cognition, so the decision appears to be related to the subject of willing, and appears to be the point of contact between the unknowable subject of will (lying outside of time) and motives (lying in time); just as above we regarded the present to be the point of contact between the unknowable subject of cognition (lying outside of time) and objects (occupying time). If we overlook variations owing to different degrees of cleverness [*Klugheit*], we see that given the same observable motives, one person acts in one way, another in another way; however, the same person, given exactly the same circumstances, acts in exactly the same way, as though according to maxims, even if these are not present to his reason as abstract propositions, and even if he is most vividly aware that he could have acted in a completely different way had he so *willed*, i.e., that his will is determined by nothing external – and it is not a question here of *being able* [*Können*], but only of willing, which by its nature is free to the greatest degree, indeed, which is the innermost essence of the human being, independent of everything else. This observation leads to the assumption that there is an enduring state of the subject of the will, one from which his decisions necessarily follow. As *thus observed*, the way of acting is any person's *empirical character*; it can be surmised and inferred from the individual's actions, but it is not an immediate object of inner sense for individuals themselves. Since these expressions of the individual character are fragmentary, but indicate unity and unalterability of character, it must be thought of as the appearance of a permanent state, as it were, of the subject of the will, lying outside of time, which absolutely can never be cognized. I say permanent state, *as it were*, since *state* and *permanent* are only temporal, but there is no expression for the extra-temporal. Perhaps I could better indicate what is meant, although also figuratively, if I call it a universal act of will lying outside of time, of which all temporal acts are only the emergence, the appearance. Kant has called this the *intelligible character* (perhaps it would more correctly be called unintelligible), and in the *Critique of Pure Reason*, pp. 560–86 [Ak. A532–558/B560–586] he provides a discussion of the difference between it and the *empirical* character, as well as the whole relation of freedom to nature, a discussion I regard as an incomparable, highly admirable masterpiece of human profundity. In the first volume of his [*Philosophical*] *Writings*, pp. 465–73, Schelling provides a very valuable, illustrative exposition of this. In referring to any work, here, as in the whole essay generally, I have not wanted to repeat what has already been well put elsewhere, but only to provide what was necessary and what touches on the issue from the angle relevant to our present purpose. It is generally my intention to exclude from this philosophical monograph everything extraneous, and particularly to exclude everything ethical and aesthetic, since these would provide no new class of objects and, like so many other topics, are not necessary to our division of classes of objects; considering them would fill a treatise exceeding the present essay in scope as much as in content, one which would read very differently from our division, but be completely in agreement with it.

> If we could know the empirical character of a human being perfectly, then from the circumstances in which we find him, as the motives of his actions, we could predict his behaviour as something following from a rule, just as well as an effect can be predicted from knowledge of the cause. However, there would still have to be a significant *correction* to the prediction because of the difference between a human being's circumstances (which belong to the total representation of an experience that we all have in common, i.e., which is objective), and the combinations of judgements that he makes about them according to the measure of the acuity of his understanding. However, perfect knowledge of the empirical character and of which correction to apply is impossible because neither is given to us as object, but we only surmise them from a limited number of cases, and a perfect knowledge of even these cases is impossible because we never know all the past and present impressions that the human being has received and that modify his disposition when he makes a decision and modify his judgement when he deliberates. Nevertheless, such knowledge is in fact possible to a certain degree, often even actual and of great use to the people of the world. For the latter purpose, pragmatic psychology provides an introduction, but it is the overall purpose of empirical psychology. The empirical character of animals is much easier to establish since each species has only one character that presents itself just as clearly in every individual and with just as slight variation as there is in the manifested type of the nature [*Beschaffenheit*] of the species. Therefore the empirical character of the species can be surmised quite well from experience with different individuals, and anyone who has attentively observed many individuals of the species will be able to predict how a dog, a cat, or a monkey would act in any particular instance – better and with a high degree of certainty with the less perfect species of animals. The movement of the infusiorians must even happen according to definite mathematical patterns. Concerning the human race, such observations of the species as a whole are indeed what

is called knowledge of human nature (i.e., an unsystematic, empirical–pragmatic psychology), the rules of which, however, are never certain because of the obvious existence of individual character, which is a phenomenon of freedom conditioned by reason, and like freedom peculiar to humans. From what has been observed here, the difference between a play or novel and Aesop's fables or Reynard the Fox is clear. In any case, this is why in this last book proper names coincide with the species, or rather, are just a pleonastic addition to them: Noble the Lion, Isegrin the Wolf, Brown the Bear. Finally this is why only the human has an individual physiognomy and the animal has merely the physiognomy of the species, although the face of an individual animal can have accidental differences from that of another, just as its paws can.

Motive, then, is the sufficient ground of acting for the empirical character. Indeed, the circumstances that become motives for acting are not causes of these actions (which, as such, are not their effect) because the action does not follow from motives, but from the empirical character solicited [*sollicitirten*] by motives, which character itself is not immediately perceptible, but (to repeat) is inferred and imperfectly surmised from actions.

In one respect, the law of causality can be compared to the optical law that governs the way a light ray affects a colourless, transparent body with parallel surfaces or a colourless mirror: that is, it is let through or reflected unaltered, and afterwards it is as it was before, and from the former state of affairs the latter can be predicted. But the law of motivation can be compared to the optical law that governs the way a light ray affects a coloured body: here the same light is red from this body or green from another, or from a third, which is black, it is not reflected at all; and just how each body would reflect the light cannot be predicted from whatever else is known about the body or about the light, but is only known upon perceiving the two working together. Just as it has reflected the light once, it will reflect the light at all times because there is just one kind of light. Now, however, if there were many specifically different kinds of light, the same body could reflect one as yellow and another as red, and then it would be as difficult to determine the colour of the body as it is difficult to

> know a human being's empirical character because it appears under all sorts of influences: under one influence the person acts one way, under another the person acts otherwise, although the person always acts the same under the same influences. But we see in the great poets, particularly in Shakespeare, that it is possible to obtain glimpses into the coloured ball of the empirical character so profound that, while beyond the reach of all explanation, they intimate an immediate insight into the intelligible character.
>
> With the forms of the principle of sufficient reason previously presented, the knowledge of what is grounded was given along with the knowledge of the ground as such, permitting a hypothetical judgement that is certain. This is not the case with the present form: we are able to know motives, but we do not thereby know how the subject will subsequently act. For each subject has a particular empirical character, and perfect knowledge of the empirical character of an individual is impossible. Here the rule-governed quality that applies to the other forms of the principle of sufficient reason ceases because in that case we remain in the world governed by laws, but here we encounter a completely different world, bordering on the realm of freedom. If I compare my presentation of the first three forms of our principle with moving images I had cast on the wall with a magic lantern, then now with the fourth form, a trap door has opened, one through which there enters a light before which some of my images disappear, and some become fragmented, unclear, and confused.

133 This sentence appears as the first sentence of the second paragraph of § 45 in A.

134 ‘*principle of sufficient reason of acting*, *principium rationis sufficientis agendi*, or more briefly put, *the law of motivation*’ appears in the final sentence of the second paragraph of § 45 in A.

135 The title of § 44 in B changes that of § 47 in A, from ‘*Causality of Will on Cognition*’ in A to ‘*Influence of Will on Cognition*’ in B. § 47 in A reads:

> The will not only causally affects the immediate object and, thus, the external world, but also the cognizing subject: for it can compel the cognizing subject to repeat representations that have once been present to the cognizing subject, generally to direct attention to this or that, and to evoke any series of thoughts it prefers. In particular the mental images (mentioned above) are repetitions of the kind of representations made present through the mediation of the immediate object, but without such mediation; thus, unlike immediate representations, they do not belong to the totality of experience, and consequently are not subject to the law of causality governing the totality of experience, but to that law that governs the expressions of the will, the law of motivation, even when we do not perceive the expression of the will, but only its immediate effect as it then appears to us, as if something without any connection to anything else has come to our consciousness. But that this could not have happened, as I said above, is precisely the root of the principle of sufficient reason. Any image that is suddenly presented in our imagination, and any judgement that does not follow from a ground that was previously present, must be evoked through an act of will that has a motive, although the motive (because it is trifling) and the act of will (because its satisfaction is so easy that it is simultaneous with the act of will) are frequently not perceived. The motive for the evocation of such mental images, or even judgements, that, as we say, occur to us suddenly, is normally the association of ideas, i.e., the wish to have representations similar to each present representation; this is an act of will that arises from the motive of our particular desire to perfect our knowledge (therefore, it is stronger among intelligent people), to which end it is useful to unite similar representations in order to satisfy the law of homogeneity.

136 ‘to repeat representations that have once been present to the cognizing subject, generally directing attention to this or that, and evoking any series of thoughts it prefers’ occurs in § 47 of A.

137 ‘so that it then appears to us as if it had come to our consciousness without any connection to anything else; but that this could not have happened, as I said above, is precisely the root of the principle of sufficient reason’ occurs in § 47 of A.

138 ‘Any image that is suddenly presented in our imagination, and any judgement that does not follow from a ground that was previously present, must be evoked through an act of will that has a motive, although the motive (because it is trifling) and the act of will (because its satisfaction is so easy that it is simultaneous with the act of will) are frequently not perceived’ occurs in § 47 of A.

139 § 45 in B corresponds to § 48 in A, bearing the same title.

140 In B, ‘For just this reason…’ through to ‘…by which means he will retain possession of them’ is added, replacing in A: ‘In the *Symposium* (pp. 240–1), Plato says something to some extent quite similar’. [Perhaps Schopenhauer had in mind 210–212a.]

141 The three sentences from ‘And we do not want to forget that…’ through to ‘…and the greater the second, the greater too must be the other’ are added in B.

142 The three sentences from ‘Moreover, the whole thing is still subject to the corrective…’ through to ‘…and for what is significant in itself’, followed by a paragraph break, are added in B.

143 A brief paragraph was inserted at the conclusion of § 45 in Schopenhauer's author's copy. The identical paragraph was also found in the author's copy of *Parerga and Paralipomena*, Vol. 2. Hübscher assigns this to *Parerga and Paralipomena*, Vol. 2, § 350a [*SW* 6, 643ff., MS 492]. The paragraph is as follows, ‘As far as possible, one should attempt to refer that which one wants to incorporate in memory to an intuitive image, whether it is now immediate, as an example of the thing, or as a mere simile or analogue, or whatever else because everything intuitive is more quickly retained than that which is mere thought in the abstract [*in abstracto*] or just words. For this reason we more readily retain that which we experience than that which we have read’.

In addition, B entirely omits § 49 in A, the whole of which reads as follows:

* By this I understand the opposite of *criticism* [*Kriticismus*] in the original sense of the word, i.e., differentiation carried out to completion. Thus, synchronism is intermingling things which are different.

§ 49 Feelings, etc.

Since they are perceived by us, our feelings, affects, passions, etc., are without a doubt objects for the subject and must, as such, either be subsumed under the classes cited here or comprise their own class. I find that they all can be reduced to 1) a physical feeling, the two extremes of which are pain and sensual delight [*Wollust*], and between the two there are endless modifications [*Modifikationen*]. They are states of the immediate object and, as such, are subject to the law of causality. The subject of willing, however, by means of its causality on the subject of cognition, is able to direct this subject of cognition to objects different from the immediate object and its states. – 2) acts of will, among which I reckon lust, fear, hate, anger, sorrow, joy and the like, because they all are a fervent willing that something happen or not happen, the causality of which is either inhibited through external hindrances or through the same subject's opposing willing, an inhibition that just raises the willing to even greater degree. This is similar to the way electricity is intensified through resistance. Joy is a willing suddenly released and satisfied following such an inhibition. Sadness is the enduring willing for something recognized as impossible to achieve, thus a rational person says, ‘I have enough motive to be sad, but I will not be’. As acts of will they are subject to the law of motivation. The immediate object of willing, like that of cognition, the body, is almost always affected by them, and physical feelings accompany them and intermix with them. That they are acts of will is already attested by the general demand that one control, even suppress them, i.e., that one raise opposing wishes to willing so that finally through persistent suppression, they no longer arise. However, if the opposite occurs, if the empirical character shows itself to be so completely determined by such fervent wishes that it appears as if no opposing wishes could arise and as if human beings in this regard are put in the same position as animals, with their use of reason suspended, then they are called *passions*. Finally, third, feelings can be traced back to combinations of bodily states and acts of will: when an unclearly cognized, unpleasant bodily affection [*Affektion*] excites [*erregt*] a will to extinguish it whose object is therefore not clear, then the cognitive faculty seeks another object for it: this is hypochondria. The sudden cessation of such bodily affections and of their accompanying inhibited will that has no clear object, are called a pleasant feeling, a sense of well-being, etc.

> People also talk about moral feeling, religious feeling, aesthetic feeling. Yet I must explain that, not to render my own classification immune to attack, but on other, adequate grounds, I find these terms objectionable, and I absolutely cannot accept them as valid. Having proceeded from completely inessential determinations, these terms have come about through a blind *synchronism*,[*] which subsumes the best in humankind – to which indeed the rest of the world bears a relation as does a shadow in a dream to real, solid bodies – under a category with all sorts of things very different from it – with that which is completely animalistic in our nature, indeed even with that which is worse than animalistic – and so has called all of this *feeling*. On account of my plan, mentioned above, not to set foot in the realm of ethics and aesthetics in this treatise, I cannot proceed any further with this topic. As in a preparation of a single part of the anatomy, in a monograph, too, one must always note the places where the part is cut off from the other parts of the whole it necessarily belongs to and where a natural connection is arbitrarily and forcefully destroyed.

144 §§ 50 and 51 are eliminated in B, so that § 52 of A corresponds to § 46 of B, which opens chapter 8. § § 50 and 51 in A, are as follows:

§ 50 Transition

In the last four chapters, the four meanings of the principle of sufficient reason and the four laws of our cognitive faculty from which they arise are presented in detail; however, these laws in turn appear to be connected and to be modifications of a single law. Now there remains nothing further for us to undertake than some observations concerning the principle of sufficient reason in general and its four forms.

§ 51 Other principles of the division of the four types of grounds

It is obvious that instead of attempting the one investigation, I set myself the task of attempting two: instead of distinguishing and dividing the four forms of the principle of sufficient reason according to the four classes of the possible objects of our faculty of representation, I could just have used Kantian principles to support each of my divisions of the grounds of the four powers of mind and consequently have said: the principle of the reason of becoming, as the law of causality, lies in our *understanding*; the principle of sufficient reason of knowing, as the faculty for drawing inferences, lies in our *reason*; the principle of the reason of being lies in our *pure sensibility*; and finally, the law of motivation governs our *will*. I could also have based my division on the disciplines that Kant presented, so that the principle of causality could have been derived from the *Transcendental Logic*, the principle of reason of cognition from the *General Logic*, that of the ground of being from the *Transcendental Aesthetic*, and finally the law of motivation from the *Ethics* [*Sittenlehre*]. Meanwhile the division I preferred may be justified on the one hand through the presentation itself, for through this presentation the division has involved investigations that were perhaps of more interest, but certainly just as much interest, as the investigation made for the purpose itself (and then again, this investigation would not have been so thorough); and on the other hand it appears to me that through this division our investigation brought to light an essential result – namely that these four laws of all of our cognition have not simply an expression in common in the principle of sufficient reason, but that they are originally just *one* law, taking on different forms in accordance with the differences among objects of our cognitive faculty.

145 § 46 in B corresponds to § 52 in A, bearing the same title.

146 ‘applications’ in A.

147 In B ‘according to Aristotle's rule…*Metaphysics*, IV, 1’ replaces in A ‘even so, this goal is not entirely achieved, and because of the interrelatedness of all the parts, anyone who would completely understand this treatise, must read twice’.

148 This second paragraph is added in B.

149 § 47 in B corresponds to § 53 in A, bearing the same title.

150 B adds the reference to *The World as Will and Representation* and adds the reference to the first edition of Kant's *Critique of Pure Reason*.

151 ‘chain of alterations’ is added in B.

152 In B, one sentence, ‘But from this example…was unclear’, replaces in A ‘It is the same with the law of motivation: the motive always precedes the decision and the latter, as a mere point in time (the point of contact between the subject and the object) has no duration’.

153 § 48 in B corresponds to § 54 in A, bearing the same title.

154 In B ‘just as any hypothetical judgement ultimately is based on it’ replaces in A ‘(although, as has been said, if this is founded on the law of motivation, it never has complete certainty)’.

155 This second paragraph is added in B.

156 § 49 in B is added, having no corresponding section in A.

157 § 50 in B corresponds to § 55 in A, bearing the same title.

158 ‘arbitrarily’ is added in B.

159 ‘thus, time can have neither beginning nor end’ replaces in A: ‘but not through one following it, although it provides reliable indication of this.’

160 ‘transcendental’ replaces ‘metaphysical’ in A.

161 ‘that is, an empirical truth, is the ground of the major premise to which one has been led’ is added in B.

162 ‘what one demands is no longer a ground of cognition, but’ replaces ‘what one wants’ in A.

163 In B,‘But now if one once does the opposite…’ through to ‘…like an eye, which sees everything except itself’ replaces the following in A, § 55 at: ‘In contrast, in the two last instances, for the question “why” there is no answer’.

164 In B ‘where the motive that originally had the capacity to set this individual will in motion is to be found. That it could do this’ replaces in A: ‘That now from these some determined representation becomes a motive’.

165 In B, ‘but why the empirical character was moved…’ through to the end of § 50, replaces in A, § 55: ‘…but why it becomes it [a motive] cannot be answered because the intelligible character lies outside of time and never becomes an object. Thus the series of motives finds an end in such a representation’. In A, § 56 follows immediately, but is completely eliminated from B. § 56 in A is as follows:

§ 56 Confirmation from languages

Perhaps the various types of grounds may also be found in languages, indicated by special terms, which could be ascertained through linguistic research. Just to give an example, I note that when consequents are immediately derived from grounds, words which indicate consequence appear to carry traces of such a distinction, though the distinction can often be difficult to observe precisely in written works, because this requires a very fine sensitivity and close attention. So it appears to me, e.g., that the words *ergo*, *folglich*, *sintemal,* indicate consequence from the ground of cognition or of being – *inde*, *quare*, *daher*, consequence from the ground of becoming – and finally, *igitur*, *quamobrem, also,* consequence from the ground of acting.

166 § 51 in B corresponds to § 57 in A, bearing the same title.

167 This last sentence of § 51 is added in B. In A, § 58 follows immediately, but is completely eliminated from B. § 58 in A is as follows:

§ 58 Apology [Apologie] concerning imagination and reason

It seems to me that before I conclude this treatise, it may be necessary to come to an understanding on two points. Specifically, in § 22, I have provided an explanation of the imagination which will displease all who hold the imagination to be what is noblest in humankind, and what generally makes poets and artists. Furthermore in §§ 27 and 33, I have described and designated reason in a way that likely will not satisfy those who regard *reason* to be what is best in humankind because they regard reason, with the predicate *practical*, to be what makes for virtuousness and saintliness, and I will even less satisfy those who call reason an ‘absolute cognitive faculty’ and who attribute an apotheosis to it which is in no way consistent with my description of it. Both opinions, concerning imagination as well as reason, are not only quite common, but also the opinions of very estimable and thoughtful men. In order to offer at least the possibility of appeasing them, I provide the following explanation. I take it that the imagination is not the essential, not the innermost power, by which the poet and any artist is what he is; but it is a necessary though somewhat accessory and somewhat extraneous condition for the artist; indeed, it is even the condition of great madness [*Narrheit*]. As a result it is in itself only a tool and generally as I have presented it in § 22. Secondly, as for reason, according to my judgement, on the basis of my account, it is not itself the source of virtue or saintliness (as Kant's theory, and every one arising since then – indeed generally almost any philosophy since Descartes – will have it); rather, as the faculty of concepts and consequently of action following concepts, it is only a necessary condition for virtue and saintliness. But also it is only a tool, since it is a condition for the complete villain [*Bösewicht*] too, for what Plato called the tyrant and so masterfully depicted in the 8th and 9th Books of the *Republic*. But what, then, is the innermost essence of the artist, the innermost essence of the saint, if this essence be one and the same – I will not concern myself with this, for to do so would be inconsistent with my intent not to touch upon ethics and aesthetics in this treatise. Perhaps, however, at some time this could become the subject of a larger work for me, the subject of which would be related to the present work as waking is to dreaming. We will counter misinterpretation of this last expression in criticism of our account that is now coming to an end, with Seneca's words: ‘to narrate dreams is for the wakeful’ [‘*Somnia narrare vigilantis est*’ *Epistles* 53, 8, 2].

168 § 52 in B corresponds to § 59 in A, bearing the same title.

169 Four sentences, from ‘After all, the general sense of the principle of sufficient reason’ to the end of the paragraph, are added in B.

170 ‘transcendent’ in A.

171 In A, this paragraph continues with ‘I would rather have taken my examples from Kant's own writings, even if these examples were less glaring, because it is not my intent to criticize, but only to clarify my opinion through examples’.

172 ‘consciousness’ in A.

173 ‘show itself’ [*sich zeigen*] in A.

174 Note on the last blank sheet in A [Hübscher *SW* 7, 136]:

Contradiction

The principle of reason presupposes the four classes of objects (p. 148), and yet objects first result from the application of the principle of reason

A second note in the same place: ‘To give the world a *cause* means that it did not exist previously or *otherwise*; consequently, it is to regard it only as a *state,* within an *alteration*, and consequently only as a *modification* of a being that alters, since the concept of cause is derived only from alterations. That which has a cause did not exist previously or was not *so*. To give the world a *cause* and to explain it as *eternal* is a contradiction. Spinoza commits this contradiction. Attributes are just as eternal as substance; consequently, thinking and extension cannot be created. That which is supposed to be cannot be just as eternal as that which supposes it’.

Note on a loose sheet of paper inserted in A [Hübscher *SW* 7, 136]:

‘1. An object that contradicts all conditions of thinking and cognizing cannot be thought and cognized.

‘2. Certainly things appear to us only as we *represent* them. But that our representations do not *deceive* us, but correspond to the will, is their *reality*. This agreement of our representing with our will, with the *thing in itself*, must have a deeper ground, one binding the two. How is it that my representations do not, in fact, show me the thing in itself, but still relate to the thing in itself?

‘3. The distinction between representations in a waking state and representations in a dream state is not that the former show us things in themselves, rather they relate to things in themselves, whereas the latter do not.’

2
On Vision and Colours

A Treatise

by

Arthur Schopenhauer

Est enim verum index sui et falsi.

Spinoza, Letters, 74.

[‘Since the truth bears witness for itself and for the false’]

[III] Preface to the second edition

I find myself in the unusual situation of having to improve for a second edition a book that I wrote forty years ago. Just as human beings always remain the same and unaltered in their core and that which is truly essential, while that which is superficial (that is, their appearance, manners, handwriting, style, tastes, ideas, views, insights, knowledge, etc.) undergoes great changes through the course of the years, so by analogy this brief work of my youth has remained completely the same in its essentials because the subject matter and content are as true today as they were then; however, I have improved its appearance, arrangement, and form as far as possible; it is nonetheless to be borne in mind that the improving hand is forty years older than that which wrote it, so the same problem, of which I have already had to complain in the second edition of the treatise on the principle of reason,[a] cannot be avoided; specifically the problem that the reader is aware of two different voices, those of the old and of the young man, voices so clear that whoever has a sensitive ear never doubts which is speaking at any point. This, however, cannot be changed, and it is actually not my fault; rather, in the end it must be attributed to the fact that a venerated German public requires forty years to find out who would benefit by devoting attention to it.

I [IV] composed this treatise in the year 1815, whereupon Goethe kept the manuscript longer than I had expected because he took it along on the Rhine tour he made at that time, and for this reason the final preparations and printing were postponed so that the work first appeared at Easter 1816. – Since that time, neither physiologists nor physicists have found it worthy of consideration, but, undisturbed by it, they preach from the same text. Thus it is no wonder that fifteen years later it tempted a plagiarist (as a ‘snapper-up of unconsidered trifles’, *Winter's Tale*, p. 489[b]) to turn it to his own use – which I have discussed more specifically in *Will in Nature*, first edn, p. 19 and second edn, p. 14.[a]

Meanwhile I have had forty years to test my colour theory in all ways and under many different conditions: still my conviction of its perfect truth has not wavered for a moment, and the correctness of Goethean colour theory remains just as evident to me as it was forty-one years ago when he himself showed me his experiments. So I may then assume that the spirit of truth that supported me in greater and more important things has not forsaken me in this subordinate matter. This means that it is akin to the spirit of honesty and seeks honest minds – of which it clearly finds no great selection; all the more so as it requires a devotion that takes no account of wants, nor convictions, nor popular biases, nor those of the age, but honours it alone, and is as prepared to teach Goethean colour theory among Newtonians, as it is to teach ascetic morals among modern Protestants, Jews, and optimists.

In this second edition I have omitted from the first only a few secondary discussions not directly relevant to the subject, but in contrast, I have enriched it through important additions. [V] However, between the present and the first edition of this treatise came my Latin treatment of the work, *Theoria colorum physiologica, eademque primaria*, which in 1830 I incorporated in the third volume of *Scriptores ophthalmologici minores*,[b] edited by *Justus Radius*. This is no mere translation of the first edition, but differs noticeably from it in form and presentation and is considerably enriched in subject matter. Therefore, although I have used it for the present edition, it still retains its value, especially for foreign readers.[c] Furthermore in 1851 in the second volume of my *Parerga and Paralipomena*[d] I have laid down a number of additions to my colour theory, in order to save it from oblivion, since, as I have stated in that work, there remained for me little hope at my advanced age of living to see a second edition of the present treatise. Meanwhile it has turned out differently: the public attention that has finally turned to my works has also extended to this brief and early writing, even though its content is of lesser concern to philosophy and greater concern to physiology.

However, this treatise in no way remains unproductive for the reader who is only philosophically inclined, because a more exact knowledge and firmer conviction of the completely subjective essence[a] of colour is conducive to a more thorough understanding of the Kantian theory of the similarly subjective, intellectual forms of all our cognition, and hence this treatise provides a very suitable philosophical primer. For us such a primer should be all the more welcome, as in these times, when lack of refinement dominates, knuckleheads[b] of the most insipid sort even dare without any fuss to deny the element[c] of human cognition that is *a priori* and therefore subjective, which it was the immortal service of Kant to have discovered and distinguished – while at the same time some [VI] chemists and physiologists quite seriously imagine that they are able to explain the being of things[d] thoroughly without any transcendental philosophy, and thus awkwardly adhere to the most unabashed realism: they unquestioningly accept the objective as simply given, and it does not occur to them to take into consideration the subjective, the sole means by which the objective exists.[1] The naïveté with which these people, coming from their scalpels and crucibles, take up philosophical problems is actually astounding; however, it is clear that they all exclusively follow their professional fields of study,[e] but then have something to say about everything. If only one could make such gentlemen aware that between themselves and the actual[2] being of things, the brain stands like a wall, on account of which it requires a longer way around in order to get behind the wall even to some extent – then they would not so audaciously dogmatize all day about 'souls' and 'substance' and the like – like philosophizing cobblers.[*]

Thus the additions in question, which have been temporarily deposited in my *Parerga*, and accumulated as in a storehouse, I needed to incorporate in the appropriate passages of the present edition because, of course, I could not leave it incomplete by referring the reader at the pertinent places to that chapter of *Parerga*. But then, naturally the additions used here will be left out of the second edition of *Parerga*.

Frankfurt-am-Main, in November 1854

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a *Abhandlung über den Satz vom Grunde* [i.e. *FR*]

b [Schopenhauer quotes in English from Shakespeare's *The Winter's Tale* IV, iii. 26]

a [*On Will in Nature*, pp. 334ff. below (Hübscher *SW* 4, 14ff.)]

b *Commentatio undecima exponens Theoriam Colorum Physiologicam, eademque primariam,* in *Scriptores Opthalmologici minores,* Vol. III, edited by Justus Radius. Leipzig: Leopold Voss (1830), 1–56.

c *zumal für das Ausland*

d [*Zur Farbenlehre*, Hübscher *SW* 6, 189–213]

***** The whole dispute between materialists and spiritualists, which became so strident in the years 1855–6, is merely a proof of the incredible naïveté and shameless ignorance to which the learned class has sunk as a result of the study of Hegelian nonsense and the neglect of Kantian philosophy. [This note is Schopenhauer's handwritten addition to B]

a *Wesenheit*

b *Plattköpfe*

c *Antheil*

d *das Wesen der Dinge*

e *Brotstudium*

[VII] Contents

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Variants in different editions

[1] Introduction

The subject of the following treatise is a new theory[a] of colour that at its point of departure is completely different from all previous theories. It is written primarily for those who are acquainted and conversant with Goethe's colour theory.[b] However, in addition, it will also be generally comprehensible in essentials, but all the more when one brings to it some knowledge of colour phenomena, particularly of the physiological, i.e., the appearances of colour that pertain only to the eye, of which, indeed, the most complete presentation is found in Goethe's colour theory, but which has been more or less correctly described by Buffon,[*] Waring Darwin,[**] and Himly.[***]

Buffon has the honour of being the discoverer of this noteworthy fact, which is important, indeed, indispensable for a true understanding of the essence[c] of colour illuminated by my theory.[3] Goethe, however, has opened the way for a discovery of this fact through a two-fold service. First, he broke the old spell of Newton's incorrect theory[d] and thereby reasserted freedom of thought about this subject, for, as Jean-Paul correctly observed 'every revolution expresses itself sooner, more readily, more intensely, as polemic than as thetic'[e] (*Aesthetics,* Vol. 3, p. 861[f]).[4] But this service will gain [2] recognition when the lecterns and writing desks are occupied by a completely new generation, which – had it only been so with their elders – does not have to jeopardize its own honour in overturning a theory on which they had lectured throughout their lives not as a matter of faith, but as a matter of conviction. – Goethe's second service is that in his excellent work he delivered in full measure what the title promised: data *for* a theory of colour.[a] There are important, complete, significant data, rich material for a future theory of colour. However, he did not undertake to provide this theory itself; for this reason (as on p. XXXIX of his Introduction), he even notes and admits that he presented no actual explanation of the essence of colour, but actually postulated it as a phenomenon[b] and only shows how it comes about, not what it is. Physiological colours, which are *my* point of departure, he lays down as a complete phenomenon, existing independently, without even attempting to bring them into connection with the physical colours, which are his principal theme.[5]

Indeed, when not thoroughly supported and grounded by facts, theory is nothing but a vain and empty phantom, and even any single, isolated, but true experience has much more worth. In contrast, however, all facts standing apart from a definite range of the realm of experience, even if they are completely associated, are not truly a science until knowledge of their innermost essence has united them under a general concept that comprises and contains everything that can be found only in those facts, a concept to which there are other subordinate concepts, by means of which one can immediately arrive at knowledge and a determination of each individual fact. A science perfected in such a way can be compared with a well-ordered state, whose ruler can at any moment set in motion the whole, or any greater or lesser part. Therefore, anyone in possession of a science, of the true theory of some subject matter, stands in relation to one who has acquired only empirical, unorganized (albeit very broad) knowledge of the same subject matter, as a people politically organized into a state stands to savages. The importance of theory is most brilliantly illustrated by modern [3] chemistry, the pride of our century. Of course, the factual basis of this had existed long before *Lavoisier* in the facts which had been discovered in isolation by Jean Rey (1630), Robert Boyle, Mayow, Hales, Black, Cavendish, and finally Priestley, but these were of little help to science until Lavoisier's great mind organized them into a theory that is, so to speak, the soul of all modern natural science, through which that of our time towers above all earlier sciences.[6]

If we (here, I mean very few) also see Newton's incorrect theory completely refuted by Goethe, partially by the polemical part of his work, partially by the correct presentation of colour phenomena of every kind, which Newton's theory had falsified, then this victory is not complete until a new theory appears in place of the old. For the positive generally has a more powerful effect on our conviction than the negative. Therefore what Spinoza says is as true as it is beautiful: ‘As light manifests itself and darkness, so truth is the standard of itself and of the false’. *Ethics*, Pt 2, Proposition 43, Note.[a]

Far be it from me to want to pass off Goethe's very thoughtful work, which is totally meritorious in every respect, as a mere aggregate of experiences. Rather, it is actually a systematic presentation of facts; however, it stops with these. That he felt this himself, and not without some misgiving, is attested by the following sentences from his *Isolated Observations and Aphorisms on Natural Science in General* (*Nachlaß*, Vol. 10, pp. 150, 152): ‘There is a tender empiricism that makes itself intimately identical with the object and thus actually becomes a theory.’ ‘The utmost would be to comprehend that everything factual is already theory. The blue of the skies reveals to us the fundamental law of chromatics. One need seek nothing behind the phenomena: they are themselves the theory.’ ‘If I finally set my mind to rest with the urphenomenon,[b] it is just out of resignation, but there remains a great difference whether I resign myself at the limits of humanity or within the dullness of my ignorant individuality.’ – I hope my theory to be provided here will demonstrate that it was not the limits of humanity. But how this limitation to the purely factual had its foundation in Goethe's mind, and indeed was directly [4] connected to his greatest talents, I have presented in my *Parerga*, Vol. 2, p. 146;[c] however, it is not so essential to our subject that I have to repeat it here.[7] Thus a proper theory[d] is not contained in Goethe's colour theory;[e] however, the way for such a theory is prepared by it, and a striving towards a theory speaks so clearly from the whole that one could say that the total impression of the work urgently requires a theory just as a seventh chord urgently requires the harmonic that resolves it. However, the work actually provides no unifying point,[f] the point to which everything refers, but which must always remain independent of everything, the point to which one must always look back from each separate fact. Now in this respect, to complete Goethe's work, to advance as an abstraction[a] the supreme principle on which all the data rests, and so to provide the theory of colour in the narrowest sense of the word – this is what the present treatise will attempt, ultimately only with respect to colour considered as physiological appearance; but as a result of the presentation to be given here, exactly this consideration will turn out to be the first, indeed, the more significant half of the whole theory of colour to which, from a theoretical perspective, the second half, which considers physical and chemical colours, always stands in a dependent and subordinate relation, even if it is the richer in facts.[8]

But like any true theory,[9] the theory to be advanced here will pay off its debt to the data to which it owes its origin; for, while seeking to explain what colour is in its essence, the theory will show the actual significance of the data by explaining their connections, and the data are completely confirmed in the process. Following this theory will even put one in a position to judge *a priori* the correctness of the Newtonian and Goethean explanation of physical colours. Indeed, in individual cases, the theory itself will be able to correct the data: so, e.g., in particular we will encounter a point at which Goethe, who on the whole was perfectly correct, still erred, and Newton, who on the whole was completely wrong, pronounced the truth to a certain extent – although actually more in [5] words than in sense, and even not entirely so. Nevertheless my departure from Goethe on this point became the reason why, in his correspondence with Councillor of State Schultz, edited in 1853 by Düntzer,[b] he referred to me as an opponent of his colour theory, just on the occasion of the present treatise, in which I appeared as his most resolute champion; and I have remained this into old age, just as I had already been in my twenty-eighth year. Special evidence of this is given by my large parchment, covered with writing, in the album published in his honour by his place of birth on the celebration of his hundredth birthday, in which one can see me, always alone, raising high the banner of his colour theory in fearless opposition to the entire learned world.[*] However, he demanded the most unqualified agreement, nothing more, nothing less. Therefore, as in my theory I had taken an essential step beyond him, he vented his anger in an epigram:

I would still longer bear the teacher's burden
if only the students would not at once become teachers.

What comes before these lines also alludes to this:

Your good thoughts, in others' veins,
Will soon quarrel with you.[a]

That is, I had personally been his student in colour theory, as he also mentioned in the letter cited above.[10]

However, before I come to the actual subject of this treatise, colours, it is necessary for me to make some preliminary remarks about vision in general; indeed, this aspect of the problem, the discussion of which my objective requires here, is not something optical and physiological, but that aspect which by its very nature pertains to the theory of the cognitive faculty[11] and so is completely pertinent to general philosophy. Such a discussion can be treated here, where it appears only as ancillary, as nothing more than fragmentary and incomplete. The only real reason for its appearing here is so that, insofar as possible, every reader should bring to the following main chapter the genuine conviction [6] that colours, which appear to him to clothe objects, are entirely in his eyes alone. Indeed this had already been taught by Descartes (*Dioptrics,* ch. 1[b]) and by many after him, most thoroughly by *Locke*; long before both, however, *Sextus Empiricus* (*Pyrrhonean Hypotyposes*, Book II, ch. 7, § 72–75[c]), had already amply and clearly worked it out, indeed going so far as to prove that we do not know things according to what they may be in themselves, but only their appearances, which he quite skilfully explained through the analogy that whoever sees an image of Socrates without knowing him cannot say whether it resembles him.[12] All this notwithstanding, I did not believe I could assume a correct, clear and indubitable knowledge of the thoroughly subjective nature of colour[13] without further consideration. Without such knowledge some scruples would still be felt over the observations on colours which follow, which would disturb and weaken conviction about what is expounded here.

Consequently what I present here is aphoristic and in a simple outline, only as much as our purpose requires; that is, it is the theory of external, empirical intuition of objects in space as it comes about upon the excitement of sensation in the sense organs, by way of the understanding and the remaining forms of the intellect which accompany it. In recent years I have stated the theory most comprehensively, amply, and completely in the second edition of my treatise *On the Fourfold Root of the Principle of Sufficient Reason*, § 21. Thus in regard to this important subject, I recommend this section to my reader who must see that which is given here only as a forerunner.[14]

***** *Hist. de l'acad. d. sc.* 1743 [*Dissertation sur les couleurs accidentelles*, *Histoire de l'Académie Royale des Sciences,* 1743]

****** Erasmus Darwin's Zoonomia [*Zoonomia: On the Laws of Organic Life* 1786/1796], also in *Philosophical Transactions*, Vol. 76, Waring Darwin, *New Experiments on the Ocular Spectra of Light and Colours, communicated by Erasmus Darwin, Philosophical Transactions*, Vol. 76 [1786: 313]

******* *Ophthalmologische Bibliothek*, Vol. 1, 2 ['Einiges über die Polarität der Farben', 1803]

a *Theorie*

b [*Zur Farbenlehre.* J.G. Cotta'schen Buchhandlung: Tübingen, 1810]

c *Wesen*

d *Irrlehre*

e *thetisch*

f [*Vorschule der Aesthetik, nebst einigen Vorlesungen in Leipzig über die Parteien der Zeit*. 2nd edn, Stuttgart and Tübigen: J.G. Cotta, 1813: 861]

a *Data* zur *Farbenlehre* [Goethe's title is *Zur Farbenlehre*]

b *Erscheinung*

a *Sicut lux se ipsa et tenebras manifestat; sic veritas norma sui et falsi est.* [*Ethics*, Part 2, Proposition 43, Note]

b *Urphänomen* ['primordial' or 'original' phenomenon: see p. [vii above]

c [Hübscher *SW* 6, 192]

d *Theorie*

e *Farbenlehre*

f *Bindungspunkt*

***** Published in *Parerga*, Vol. II, p. 165 [Hübscher *SW* 6, 211–13]

a *in abstracto*

b [Goethe to State Councillor Schultz, 19 July 1816 in *Briefwechsel zwischen Goethe und Staatsrath Schultz*, ed. H. Düntzer. Leipzig, 1853, 149]

a [‘Epigrammatisch, Lähmung’, in *Gedichte*, Pt. 2. Weimar edn, Vol. 2, 278]

b [Part six of *Discourse on the Method of rightly conducting one's reason and reaching the truth in the sciences* (1637)]

c *Hypotyposes Pyrrhoniae* [The Greek text of the Πυῤῥώνειοι ὑποτυπώσεις, ed. Immanuel Bekker (Berlin, 1842) gives paragraph numbers; that of J.A. Fabricius (1718) gives chapter divisions. See Mary Mills Patrick, *Sextus Empiricus and Greek Scepticism*. Cambridge: Deighton Bell & Co., 1899, Preface and p. 23]

[7] First Chapter On vision

§ 1 Intellectual nature of intuition. Distinction between understanding and reason and between illusion and error. Cognition, the character of animals. Application of all this to intuition through the eye

All[a] intuition[b] is intellectual. For without the *understanding* it would never come to intuition, to perception[c], apprehension[d] of *objects*; rather, it would remain as mere sensation,[e] which at most could have significance with regard to the will as pain or comfort, but would otherwise be a change of meaningless states and would not be anything similar to a cognition. For intuition, i.e., for cognition of an *object* first of all requires that the *understanding* refer any impression that the body[15] receives to its *cause*, placing this cause in *a priori* intuited space, as the cause from which the effect proceeds, thus recognizing the cause as acting, as *actual*,[f] i.e., as a representation[g] of the same type and class as is the body. However, this transition from the effect to the cause is an immediate, vivid, necessary one: since it is a cognition of the *pure understanding*, it is neither an inference of reason[h] nor a combination of concepts and judgements according to logical laws. Such a thing is the business of *reason*, which contributes nothing to intuition, but [8] whose object is a completely different class of representations that on earth belongs only to the human race, namely, abstract, non-intuited representations, i.e., *concepts*; through concepts, however, humans have received their great advantages: language, science, and above all the discretion[i] – only possible through the review of the whole of life – which keeps them independent of the impressions of the moment and makes it possible to act in a deliberate, premeditated, methodical way, whereby their activity is so clearly distinct from that of animals, and the condition for any deliberate choice among multiple motives is met, so that the most complete self-consciousness accompanies the decision of their will. All of this humans owe to *concepts*, i.e., to *reason*. Like all abstract[a] principles, the law of causality, as abstract principle, is, of course, reflection,[b] and thus is an object of reason, but the actual, vivid, immediate, necessary cognition of the law of causality[c] precedes all reflection as it precedes all experience, and it lies in the *understanding*. By means of the understanding the sensations of the body are the starting point for intuition of the world because the law of causality, of which we are aware *a priori*,[d] is applied to the relation of the immediate object (the body) to other objects, which are only mediated: when it has a high degree of sharpness and precision, the cognition of the same law,[e] applied only to and among mediate objects, produces cleverness,[f] which, like intuition in general, can hardly be produced by abstract concepts; therefore, being rational and being clever are two very different characteristics.

Thus intuition, cognition of objects, of the objective world, is the work of the understanding. The senses are merely the seat of an enhanced sensibility and parts of the body that are to a greater degree receptive of the influence[g] of other bodies, and indeed, each sense is open to a particular type of influence for which the remaining senses have either little or absolutely no receptivity. This specific difference of sensation in each of the five senses, however, does not have its basis in the nervous system itself, but only in the [9] way in which the system is affected. Accordingly, any sensation can be seen as a modification of the sense of touch or the capacity to feel extended across the entire body. For the substance of the nerves (apart from the sympathetic system) is one and the same in the whole body, without the slightest difference. Now if it is affected by light through the eye or by sound through the ear, so that it receives specifically different sensations, this difference cannot lie in the substance itself, but only in the way it is affected. But this in part depends on the external agent by which it is affected (light, sound, odour), in part on the structure through which it has been exposed to the impression of this agent, i.e., by the sense organ. It is the fact that in the ear the nerve of the labyrinth and the cochlea, floating in the auditory fluid, receives vibrations of the air by means of this fluid, but that the optical nerve receives the influence of light through the aqueous humour and the lens, refracting the light in the eye, that is the cause of the specific difference of the two sensations – not the nerve itself.[*] Consequently the auditory nerve could see and the optical nerve could hear, so long as the external apparatus of each exchanged places.[16] – But the modification which the senses undergo is never an intuition, but is the original stuff that the understanding transforms into intuition. Among all the senses, sight is capable of the finest and most varied external impressions; however, of itself it can merely provide sensation, which first becomes intuition through the application of the understanding to the sensation. If someone who stands before a beautiful, wide vista could for a moment be robbed of all understanding, then nothing of the entire vista would remain for him except the sensation of a highly varied affection[a] of his retina that resembles the many blobs of colour on an artist's palette[17] – which is similar to the raw stuff from which his understanding created that intuition just a moment ago.[**] – In the first weeks of life the child [10] receives sensations with all senses, but it intuits nothing, it apprehends nothing; therefore, it stares stupidly at the world. Soon, however, it begins to learn how to use the understanding and to apply the law of causality, of which it is aware prior to all experience, and to connect it with the forms of all cognition, space and time, which are likewise given *a priori*; thus it moves from sensation to intuition, to apprehension; and henceforth it gazes on the world with clever, intelligent eyes. However, since any object affects all five senses differently, these effects still lead back to one and the same specific cause, which in this way presents itself as an object; so the child acquiring intuition compares the many different types of impressions that it receives from a specific object: it feels what it sees, see what it feels, follows the sound to its cause, using smell and taste as aids; and finally, with the eye taking into account distance and illumination, it becomes acquainted with the effect of lights and shadows; and ultimately, with great effort, even cognition of perspective arises through the combination[b] of the laws of space with that of causality (both of which lie in consciousness *a priori* and need only be applied). In this process we must even take into account the alterations that occur when we see at different distances, alterations undergone partly by the inner conformation of the eyes, partly by the positions of the eyes relative to one another: the child already makes all these combinations for the understanding; only the optician makes them for reason, i.e., in the abstract.[a] Thus in this way the child processes the various data of sensibility into *intuition* according to the laws of the *understanding* of which it is conscious *a priori*, through which the world of objects first exists for the child. Much later it learns to use *reason*: then it begins to understand speech, to speak and actually to *think*.

What has been said here about intuition will become even clearer through a more specific consideration of the matter. For the acquisition of intuition it is first of all requisite to see the object upright, while its impression is inverted. Because the light rays proceeding from a body cross one another upon penetrating through the pupil, the [11] impression which the light rays make on the nerve substance of the retina (and which has been incorrectly called an image) appears in inverse order; that is, the light coming from below goes to the top; the light coming from above goes to the bottom, that from the right side to the left and vice-versa. Now if, as has been assumed, the object of intuition were an actual image here on the retina, which would then be completed by something like a soul sitting behind, in the brain, then we would see the object inverted, as actually happens in any dark room which receives light from external objects through a small hole; however, here it is not so, but rather intuition arises by the fact that the understanding instantaneously refers the impression received by the retina to its cause, which in the very process now presents itself as an object in space, the form of intuition that accompanies it. Now by tracing back from the effect to the cause, the understanding follows the direction that the sensation of the light rays brought with it, by which means everything again comes to its correct position, as now objects are presented as above which in sensation were below. – The second thing that is essential to the acquisition of intuition is that although the child sees with two eyes, each of which receives an image of the object, even to the extent that the direction from the same point of the object is a different one for each eye – nevertheless the child learns to see only *one* object.[18] This happens because by means of the original cognition of the law of causality, the effect of a point of light (although striking each eye from a different direction) is still recognized as causally originating from *one* point and object. The two lines from that point through the pupils on each retina are called the optical axes, and their angle on each point is called the optical angle. When an object is observed, if each eyeball has the same position with respect to its orbit as the other, (as is the case in the normal condition), then in each of the two eyes, the optical axes will rest on homologous points of the retina, *corresponding to one another*. But now the outer side of one retina does not at all correspond to the outer side of the other, but the right side of the left retina corresponds to the right side of the right retina, etc. From the symmetrical position [12] of the eyes in their orbits, which in all natural motions of the eyes is always maintained, we become acquainted empirically with the positions of the two retinas exactly corresponding to one another, and from that point we always refer the affections arising from these analogous positions to only one and the same object as their cause. Therefore, although seeing with two eyes and receiving doubled impressions, we recognize everything as single: that which is *doubly sensed* becomes that which is *singly intuited*, precisely because intuition is intellectual, not merely sensible. – However that in every *inference of the understanding*[a] we are guided by the conformity of the affected positions of each retina is proved by the fact that when the optical axes are directed to a more distant object and we close the optical angle on this object, then an object standing closer to us appears doubled, precisely because the light passing through the pupils to the retina does not strike two analogous places; conversely, for the same reason, we see the more distant object doubled when we have directed our eyes to a closer object and close the optical angle on it.[19] A visual presentation of the matter can be found in the illustrations in the second edition of my treatise *On the Fourfold Root*, which is very useful for a complete understanding of the matter. A thorough presentation, made clear through many figures, of the different positions of the optical axes and the phenomena produced by them can be found in Robert Smith's *Optics*, Cambridge, 1738.[20]

There is fundamentally no difference between the relation of the optical axes to the object and the impressions on each of the ten fingers touching a body, impressions that differ according to the position of each finger contacting it, but which are still recognized as resulting from *one* body: the cognition of an object never proceeds from mere impression, but only when the causal law[b] and hence the understanding is applied to the impression. – Incidentally, because this law is the sole form of the understanding and the condition for the possibility of any objective perception, it is quite absurd to claim that knowledge of the causal law first arises from experience, e.g., from the resistance that [13] bodies offer when we press on them. For the causal law is the prior condition for our perception of these bodies, which in turn must first be the motive of our acting on them. And still, if the understanding had not already possessed the law of causality and brought it to sensation, how could the law of causality proceed from the mere feeling of pressure on the hands, which has absolutely no similarity to this law! (Concerning the causality between will and actions of the body, see *The World as Will and Representation*, 3rd edn, Vol. 2, pp. 41–4; and *On the Fourfold Root of the Principle of Sufficient Reason*, 2nd edn, p. 74.[a])[21] If the English and the French still schlep[b] around the same old baggage, it can be attributed to their naïveté, because Kantian philosophy still has not gotten through to them, and thus they are still wrapped up in the inadequate empiricism of Locke and Condillac. But if German philosophasters nowadays presume to pass off time, space, and causality as knowledge gained through experience,[c] absurdities which for seventy years have been completely set aside and exploded, about which their grandfathers already shrugged their shoulders, and bring these ideas to the marketplace again (behind which, meanwhile, lurk certain intentions that I have exposed in the preface to the second edition of *On Will in Nature*), then they deserve to be confronted with Goethe and Schiller's *Xenion*:

‘Poor empirical devil! you cannot even once recognize how dumb
You are: oh! – so *a priori* dumb.[d]

In particular, I recommend that anyone who has had the misfortune to own a copy of the third edition of *System of Metaphysics* by *Ernst Reinhold*, 1854, write this verse on the title page. – Precisely because the apriority of the causal law is so very evident, even Goethe, who did not busy himself with investigations of this sort, but simply followed his own feelings, said: ‘the *innate concept* of the absolute necessity of cause and effect’ (‘On Natural Science in General’ in his posthumous works, Vol. 10, p. 123).[e] I now return to our theory of empirical intuition.[22]

After intuition has long been acquired, a very remarkable situation can occur, which provides a sort of proof of everything said. Namely, after practising for many years, every moment, what we have learned in our childhood, processing [14] and arranging the data of sensation by the laws of the understanding, we can become confused about this data through an alteration in the positions of the sense organs. There are two well-known situations in which this occurs: by shifting the eyes out of the natural, symmetrical position, thus crossing the eyes;[a] and secondly, by laying the middle finger over the index finger. We now see and feel *one* object *doubled*. As always, the understanding proceeds correctly, only it simply receives false data: for the light rays proceeding from the same point to the two eyes no longer impinge on the retinas at two corresponding positions, and the outer sides of the two fingers touch opposite surfaces of the same ball, which could never occur if the fingers were in their natural positions. From this arises seeing double and touching double as an illusion[b] which cannot be avoided because the understanding, the application of which was acquired with so much effort, cannot readily be abandoned, but always presupposes the usual position of the sense organs. – But a still more striking, if much rarer, proof of our theory is provided by the opposite situation, that is, when *two* objects are seen as *one*, which occurs because each of the two is seen by a different eye, but in each eye the homologous spot, i.e., that corresponding to the same spot[c] on the other retina, is affected. Take two identical paper tubes, and place them parallel to one another so that the space between them is equal to the space between the eyes. In the objective end of each tube, fasten something like an eight-penny piece in a vertical position. When one looks through the tubes with both eyes, only *one* tube and *one* eight-penny piece appear because the optical axes cannot close on the optical angle which would be consistent with this distance, but remain completely parallel as each follows its tube. Thus the corresponding places of the retina in each eye are impinged upon by a different eight-penny piece, and the understanding now ascribes the doubled impression to one and the same object and therefore apprehends only *one* object where there are, indeed, two. – The recently invented stereoscope depends on this. For this, two daguerreotypes of the same object are taken, but with the slightest difference of [15] position that corresponds to the parallax from one eye to the other; now these are affixed to one another in the very obtuse angle consistent with this parallax, and then are observed through binocular tubes. The result is 1) that the places of both retinas symmetrically corresponding to one another are impinged upon at the same point by both images, and 2) that each of the two eyes sees in the image lying before it just *that* part of the depicted body that remains obscured to the other eye on account of the parallax of its viewpoint – whereby it is accomplished that in the intuitive apprehension of the understanding, the two images fuse into one; but as a result of the second circumstance, these two images also appear to be a perfectly solid body – a deception[a] which a mere painting, even one of the greatest art and perfection, never produces because it only shows us its object as it would be seen by someone with one eye. I do not know how there could be a more striking proof of the intellectual nature of intuition. Thus one will never understand the stereoscope without knowledge of this; rather, with purely physiological explanations one will attempt to do so in vain.[23]

Thus we now see all such illusions[b] arise because the data, to which in earliest childhood the understanding learns to apply its laws and to which it has become accustomed throughout life, are shifted for it by being placed differently from the way they are in the natural course of things. Now at the same time, however, this observation offers[24] us such a clear view of the difference between understanding and reason that I cannot avoid calling attention to it. Such an illusion can certainly be accounted for by reason, but not done away with for the understanding, which is non-rational[c] precisely because it is pure understanding. Here is what I mean: with such an illusion, intentionally brought about, we *know* very well, in the abstract[d] or for *reason*, that, e.g., only *one* object is present, although with crossed eyes and crossed fingers we see and touch two, or we know that two are present although we see only *one*;[25] however, despite this abstract cognition[e] the illusion itself still remains in place. For understanding and sensibility are intractable to principles of reason, i.e., [16] simply non-rational. From this also follows what *illusion*[f] and *error* actually are: the former is deception of the *understanding,* the latter deception of *reason*; the former opposes *reality*, the latter *truth*. *Illusion* always arises either because the *understanding's* apprehension, which is constantly rule-governed and inalterable, is subverted by an unusual condition of the sense organs (i.e. a state different from that to which it has learned to apply its functions); or because an effect which the senses usually receive daily and hourly from one and the same cause is produced for once by a completely different cause: this is so, e.g., when a painting appears to be a relief, or a stick thrust in water seems to be broken, or a concave mirror shows an object as if floating before it, a convex mirror shows it as if behind it, or the moon appears much larger on the horizon than at its zenith, the last of which is due not to refraction, but to understanding's immediately estimating the moon's size according to its distance and, as with terrestrial objects, according to atmospheric perspective, i.e., according to obscurity[a] through haze.[26] – Conversely, *error* is a *judgement of reason* that is *not* related to something external to it as is required by the principle of reason in the form applicable to reason as such;[b] thus, error is an actual, but false judgement, a baseless abstract[c] supposition.[27] Illusion can occasion[d] error: an example of this would be the case given earlier of the judgement 'there are two balls', which does not stand to anything in the relation just mentioned, and thus is groundless.[28] On the contrary, the judgement 'I feel an impression as if there were two balls' would be true, since the judgement is in the aforesaid relation to a sensible affection.[e,29] An error can be eliminated precisely through a judgement that is true and has illusion as its basis, i.e., by declaring the illusion to be such. An illusion, however, cannot be eliminated through abstract cognition based on reason;[f] e.g. the moon does not appear smaller when one reasons that it appears enlarged when it is viewed through an atmospheric perspective and when it is viewed horizontally through the increased density of a haze. However, the illusion can gradually disappear if its cause is persistent and the unusual becomes usual.[30] E.g. if someone always [17] crosses their eyes, the understanding seeks to correct the way they apprehend things,[g] and through the correct apprehension[h] of the external cause seeks in various ways to produce agreement between perceptions, e.g., between vision and touch. It now does anew what it did in the child: given the new position of the eyes, it becomes acquainted with the places of each retina on which light rays coming from *one* point impinge. In this way, the person habitually cross-eyed sees everything only as single. But if someone through an accident, e.g., paralysis of the eye muscles, *suddenly* is compelled to constantly be cross-eyed, then at first he continually sees everything doubled. This is verified by the case which Cheselden explains (*Anatomy*, p. 324, 3rd edn): when a man received a blow to the head, his eyes were permanently crossed: he now saw everything doubled, but after some time single again, although the unparallel position of the eyes remained. A similar case history can be found in *Ophthalmological Library*, Vol. 3, pt. 3, p. 164.[a] If the patient described there had not soon been cured, he would indeed have had permanently crossed eyes, but he finally would have no longer seen double. Home has told of still another case of this type in his lecture in the *Philosophical Transactions* for 1797.[b] – In the same way, anyone who always held his fingers crossed[c] would ultimately no longer feel double. But so long as someone crosses his eyes in a different optical angle each day, he will see everything double. – Moreover, it may always be as Buffon claimed (History of the Academy of Sciences 1743[d]), that one whose eyes are sharply crossed inward will see absolutely nothing with the crossed eye, but this will not apply in all cases of crossed eyes.[31]

Now since there is no intuition without understanding, all animals indisputably possess understanding; indeed, it distinguishes animals from plants, as reason distinguishes humans from animals. For the actual distinguishing *character of being an animal is cognition* and this absolutely requires understanding. There have been all sorts of attempts to establish a characteristic mark distinguishing between animals and plants, and nothing fully satisfying has ever been discovered. The most striking is still spontaneous motion in taking up nourishment.[e] But this is only a phenomenon based on cognition [18] and is thus to be subordinated to it. For a truly spontaneous movement, not following from mechanical, chemical, or physiological causes, occurs only upon a *cognized object* which becomes the *motive* of the movement. Even the animal that is most closely related to the plant, the polyp, when it seizes its prey with its tentacles and takes it to its mouth, has seen it, has perceived it (although without specialized eyes), and in fact the polyp would never have come to this intuition without understanding: the intuited object is the motive for the polyp's movement. – I would set the distinction between the inorganic body, the plant, and the animal in this way: an *inorganic body* is one for which all movements occur from some external cause which is equal to the effect in degree, so that the effect can be measured and calculated from the cause, and the effect produces a completely equal counter-effect in the cause. A *plant* is that which has movements whose causes are in no way equal to the degree of the effects, and consequently do not provide the measure of the latter and do not undergo an equal counter-effect: such causes are called *stimuli*.[a] Not only the motions of the sensitive plants and of the *Hedysarum gyrans*,[b,32] but all assimilation, growth, inclination to light, etc., of plants is movement from stimuli. Finally, an *animal* is something whose movements do not directly and simply[33] follow from the law of causality, but follow from that of motivation, which is causality passing through and mediated by cognition; consequently, only something that cognizes is animal, and *cognition is the peculiar character of being an animal*. One must not object that cognition cannot provide a characteristic mark because, finding ourselves as external to the being to be judged, we cannot know whether it cognizes or not. For we certainly can do this, specifically because we judge whether that which the animal's movements follow from affected the animal as *stimulus* or as *motive*: about this no doubt can remain. For although stimuli differ from causes in the aforementioned way, they still have this in common with the other causes: in order to work, they always require contact, frequently even intussusception, but always a certain duration [19] and intensity of influence;[34] while, conversely, an object acting as motive need only be perceived, regardless of at what length, how distantly, how clearly – as long as it is simply perceived. It is self-evident that in many respects the animal is also a plant, indeed, even an inorganic body. – This very important distinction among the three levels of causality, presented here only aphoristically and briefly, can be found more thoroughly and specifically discussed in *The Two Fundamental Problems of Ethics*, ch. 3 of the first prize essay, pp. 30ff.,[c] as well as in the second edition of the treatise *On the Fourfold Root*, § 20, p. 45.[d,35]

Finally, I now arrive at the part that relates what has just been said to our actual subject, *colours*, and I turn to a very specific and subordinate part of intuition of the material world; for just as the intellectual part of intuition, which has been considered up to this point, is actually the function of the considerable nerve mass of the brain, weighing 3 to 5 pounds, so in the chapter that follows I have only to consider the function of a fine nerve membrane on the back of the eyeball, namely the retina, the specially modified activity[a] of which, as I will demonstrate, is colour, which in any case clothes intuited bodies as a unnecessary addition. For[36] intuition, i.e., the apprehension of an objective material world filling space in its three dimensions, arises through the understanding, for the understanding, in the understanding, which like the forms of space and time lying at its basis, is the function of the brain,[37] as was generally indicated above, but has been discussed in more detail in § 21 of the treatise *On the Fourfold Root* already cited. The senses are merely the starting point of intuition of the world.[38] For this reason their modifications are given prior to all intuition, since as mere sensations they are the data from which cognized intuition first comes into existence in the understanding. Foremost among these data is the impression of light on the eye and next colour, as a modification of this impression. Thus these data are the affection of the eye, are the effect itself, which exists even without its being related to a cause. The newborn child senses light and colour before it [20] cognizes and intuits the illuminated or coloured object as such. And crossed eyes cannot alter colour. If the understanding transforms sensation into intuition, then of course this effect is referred to and assigned a cause, and light and colour are attributed to the body producing the effect as qualities, i.e., types of effect.[b] The body is still recognized only as that which brought forth this effect. ‘The body is red’ means that in the eyes it produces the colour red. Generally, ‘to be’ is synonymous with ‘to act’:[c] thus even in German, very strikingly and with unconscious profundity, everything that *is* is called *actual*, i.e., acting.[d] – Just because we apprehend[39] colour as inherent in a body, the preceding immediate perception[40] of it is certainly not altered: colour is and remains an affection of the eye: the object is intuited merely as its cause: but the colour itself is only the effect, a state brought about in the eye, and as such it is independent of the object, which exists only for the understanding, since all intuition is intellectual.

a *Verständigkeit*

b *Anschauung*

c *Wahrnehmung*

d *Apprehension*

e *Empfindung*

f *wirkend, als wirklich*

g *Vorstellung*

h *Vernunftschluß*

i *Besonnenheit*

a *in abstracto*

b *Reflexion*

c *Erkenntniß des Gesetzes der Kausalität*

d *das* a priori *uns bewußte Gesetz der Kausalität*

e *die Erkenntniß des selben Gesetzes*

f *Klugheit*

g *Einwirkung*

***** Cabanis, des rapports du physique et du moral: Mémoire III, § 5 [Pierre Jean Georges Cabanis, 'Rapports du Physique et du Moral de l'Homme'; 2nd edn, Paris: Crapart, Caille & Ravia, 1805]

****** This concerns the pages that Prof. *Rosas* in Vienna has appropriated; this and further plagiarism has been reported in *On Will in Nature,* 2nd edn, pp. 14ff. [Hübscher *SW* 4, 14ff. See pp. 335ff. below]

a *Affektion*

b *Vereinigung*

a *in abstracto*

a *Verstandesschluß*

b *Kausalitätsgesetz*

a [Hübscher *SW* 3, 41–4), and p. 72 above (Hübscher *SW* 1, 74)]

b *schleppen*

c *Erfahrungserkenntnisse*

d [*Die Xenien*; Weimar Goethe-Ausgabe, I, Vol. 51, p. 232, No. 190]

e *Über Naturwissenschaft im Allgemeinen* [‘Zur Naturwissenschaft, einzelne Betrachtungen und Aphorismen’; *Goethe's Werke, Vollständige Ausgabe letzter Hand*, Vol. 50, p. 123; Weimar Ausgabe II, vol. 11, p. 103]

a [The verb, from which the noun is formed, *schielen*, indicates either ‘to squint’ or ‘to be cross-eyed’. Historically, ‘to squint’ could indicate ‘to look with the axes of the eyes not parallel’. However, the more contemporary English sense of ‘to squint’ is ‘to look with eyes partially open’. For the verb *schielen* and the related noun *das Schielen*, then, the translators chose ‘cross-eyed’ as the more fitting equivalent to Schopenhauer's sense of the cause of seeing double and as parallel to Schopenhauer's sense of double touching (*Doppelttasten*) produced by crossed fingers]

b *falscher Schein*

c *Stelle*

a *Täuschung*

b *Illusionen*

c *unvernünftig*

d *in abstracto*

e *abstrakten Erkenntniß*

f *Schein*

a *Trübung*

b [Schopenhauer refers here to the principle of sufficient reason of knowing; see § 29 in *FR*, p. 100 above]

c *in abstracto*

d *veranlassen*

e *empfundenen Affektion*

f *Vernunfterkenntniß*

g *seine Apprehension*

h *Auffassung*

a [‘Dr Albers Plötzlich Entstandenes Schielen und Doppeltsehen durch Galvanismus geheilt’, *Ophthalmologische Bibliothek* Bd. 3, St. 3, 1807, s. 164ff.]

b [‘The Croonian Lecture. In which some of the morbid Actions of the straight Muscles and Cornea of the Eye are explained, and their Treatment considered. Read November 17, 1796.’ *Philosophical Transactions of the Royal Society of London 1797*, Vol. 87:1]

c *übereinandergeschlagen*

d *Hist*[*oire*] *de l'Acad*[*émie Royale*] *d*[*es*] *Sciences*

e *motus spontaneus in victu sumendo*

a *Reize*

b [The leaves of the *Hedysarum gyrans* (now *Codariocalyx motorius*) known as the 'telegraph' or 'semaphore' plant, perceptibly rotate. See *FW*, 54]

c [See *FW*, 52–61]

d [See p. 38 above]

a *Thätigkeit*

b *Wirkungsarten*

c *Seyn ist überhaupt mit Wirken geleichbedeutend*

d *Alles was* ist, wirklich*, d.i. wirkend, genannt wird*

[21] Second Chapter On colours

§ 2 Full activity of the retina[41]

A[a] result of our previous account is that brightness,[b] darkness,[c] and colour, taken in the strictest sense, are states, modifications of the eye, which are simply sensed[42] immediately. A thorough[43] account of colour must proceed from this idea[d] of it, and as a result, begin to investigate[44] it as a physiological phenomenon.[e] For in order to work properly and deliberately, before one undertakes to discover the cause for a given effect, one must first become fully acquainted with the effect itself, because it is only from the effect that one can collect the data for the discovery of the cause, and only it provides the direction and guiding thread[f] to the cause. *Newton's* fundamental mistake was just this: without some accurate acquaintance with the effect according to its inner relations,[g] he went too hurriedly in search of the cause. However, from the most ancient to Goethe's most recent, all colour theories make the same mistake: they all merely talk about which modifications of its surface a body must undergo (perhaps through analysis of its components) or which modifications light must undergo (perhaps through turbidity[h] or through some other combination of shadow) in [22] order to show colour, i.e., in order to stimulate a specific sensation in the eye, which cannot be described, but can only be detected by the senses. Instead, obviously the correct way is first of all to turn to this sensation itself in order to discover whether one could find out what constitutes it in and of itself, that is, physiologically, according to its nature and conformity with laws.[i] Obviously such a precise knowledge of the effect, which actually is what is at issue when one speaks of colours, will also provide data for the discovery of the cause, i.e., the external stimulus which excites such sensation. First, for each possible *modification* of an effect, one must at all times first be able to demonstrate the precisely corresponding *capacity for modification*;[a] furthermore, where the modifications of the effect show no sharp boundaries between one another, such boundaries should not be found in the cause, but there too there must be the same gradual transitions;

finally, where the effect shows contrast, i.e., allows a complete reversal of its character, then the conditions for that contrast must also lie in the nature of the cause, according to Aristotle's rule: ‘contrary causes for contrary effects’ (*On Generation and Corruption* II, 10).[b] Consistent with all of this, one will find that my theory, which considers colour only in itself, i.e. as a given specific sensation in the eye, already provides data *a priori* for an assessment of Newtonian and Goethean theory of colour as objective,[c] i.e. the theory of external causes that excite such sensation in the eye; and from this it will result that everything speaks for the Goethean theory and against the Newtonian. – Thus only after the consideration of colour as such, i.e. as a specific sensation in the eye, can we undertake the completely different consideration of the external causes of those particular modifications of the sensation of light,[45] i.e., the consideration of those colours which Goethe quite correctly divided into physical and chemical.[d]

It is the indubitable teaching of physiology that all sensibility is never pure passivity, but reaction to sensed stimulus. Even with special reference to the eye, and specifically insofar as it sees colour, Aristotle had already expressed this: ‘that which perceives colour is not only affected, but also reacts’ [23] (*On Dreams*, 2).[e] One will find a most convincing discussion of the matter in, among others, *Darwin's Zoonomia*, pp. 19ff.[46] – I will always call the eye's unique reaction to external stimulus its *activity*, and, indeed more precisely, the activity of the *retina*, since this is undoubtedly the seat of that which in vision consists of mere sensation.[47] That which by itself immediately and originally stimulates this activity is *light*. The eye, sensing the full influence of light, manifests the *full activity of the retina*. *Inactivity* of the retina occurs with the absence of light, or in *darkness*.

Bodies that, under the influence of light, react on the eye just like light itself are *shining*,[a] or *mirrors*.

Those bodies are *white* that, when exposed to the influence of light, react on the eye not completely like light itself, but with a slight difference: specifically, a certain softening[b] and proportionate diffusion, which, unless one moves from the phenomenon in the eye to its cause, one cannot more precisely determine than that it is an absence of the shining and radiant properties of light. Just as radiant heat can be distinguished from diffused heat, so white could be called diffused light. If, however, one were to express the effect through the cause, then Goethe's explanation is completely appropriate and correct: white, appearing in a physical way, is perfect turbidity.[c] Bodies that, under the influence of light, do not at all react on the eye are *black*.

This entire discussion will disregard shining as something not concerning its subject. White will be regarded as light that reacts, so that the effect of both (of light and white) on the eye will be regarded as essentially the same. Thus we say: under the influence of light, or of white, the retina is in *full activity*: but with the absence of either of the two, i.e, with darkness or black, *inactivity* of the retina occurs.[48]

[24] § 3 Intensively Divided Activity of the Retina

The influence[d] of light and white on the retina and the activity of the retina resulting from it have degrees in which light approaches darkness and white approaches black in continuous transition. In the first case the degrees are called half-shade,[e] and in the other they are called gray. Thus, for the activity of the retina, we get the following two series of determinations, which essentially amount to only one series and which are differentiated merely through the incidental circumstance of the immediate or mediated influence of the stimulus:

Light;	Half-Shade;	Darkness;
White;	Gray;	Black.

The degrees of reduced activity of the retina (half-shade and gray) indicate only a partial intensity of such activity; for this reason I generally call the possibility of such degrees the *intensive divisibility of the activity of the retina*.

§ 4 Extensively divided activity of the retina

Just as we found the activity of the retina to be intensively divisible, so too, since it is inherent in an extended organ, this activity can be extensively divided along with this organ, which produces an *extensive divisibility of the activity of the retina*.[49]

The existence of this no doubt follows from the fact that the eye can receive manifold impressions simultaneously, and thus next to one another. However, the experience described by Goethe (*Theory of Colours*, Vol. 1, pp. 9 and 13) calls special attention to it: having for a while viewed a black cross on a white background, he then substituted for this impression a neutral gray or dimmed surface; this gave rise to the visual phenomenon reversed, that is, a white cross on a black background. At any time one can do this experiment with a window mullion. This phenomenon is explained by the fact that in those places of the retina that had been affected by the white background, the activity is so exhausted by the stimulus that for a short while, the retina can no longer [25] be markedly excited by the much slighter stimulus of the gray surface, which, in contrast, acts with all its force on the remaining places of the retina – particularly those places, affected by the black cross, that had rested during this inactivity – producing a proportionally intensive degree of the retina's full activity. For this reason, the reversal of the phenomenon is really only apparent here; at any rate, it is not (as one might be inclined to believe) spontaneous – that is,[50] it is not a real action that the previously rested part falls into *automatically*,[a] for if one closes one's eyes after receiving the impression (though the eyes must also be covered by one's hands[51]) or looks into complete darkness, the phenomenon is not reversed, but the experienced impression persists for a while, as Goethe has also indicated (*Theory of Colours*, Vol. 1, Pt. 1, § 20)[52]: this fact would not be consistent with the assumption of spontaneity. If, however, in doing this, one neglects to cover the eyes with one's hand, then the light penetrating the eyelids will create the effect of the above-mentioned gray surface, and for that reason, of course, the phenomenon will be reversed; that this is the result of the light penetrating the eyelids, as was just said, follows from the fact that as soon as one then covers the eyes with the hand, the reversal ceases immediately. This experiment has already been conducted by *Franklin*, whose own report of it Goethe repeats in the historical part of his *Theory of Colours*. – It is necessary to be clear about this so that one can recognize the essential difference of this phenomenon from that which will presently be discussed.[53]

§ 5 Qualitatively divided activity of the retina

The intensive and extensive divisibility of the activity of the retina, which has been presented so far and which is not subject to doubt, can be subsumed under the general concept of a *quantitative divisibility of the activity of the retina*. Now, however, it is my intention to show that there can be still a third division of this activity, that is, a *qualitative* division totally different in kind[a] from the other two, and that this activity is actually [26] accomplished as soon as some *colour* is in any way present to the eye. The phenomenon mentioned at the end of the previous section offers us a convenient transition to this observation. I will immediately focus our attention on it once more.

First, however, I must here make it apparent to the reader that for an understanding of the actual core of my theory of colour, which is soon to follow, an autopsy[b] is indispensable; that is, one must repeat the experiments about to be presented here oneself. Fortunately, this is extremely easy. It requires nothing more than a few little pieces of paper or silk ribbon in the vivid colours to be indicated; cut these into disks (the shape assumed here) or even into any other preferred shape of a few square inches; affix these lightly to a gray or white door and then, after staring at them for about 30 seconds, quickly take them away, while continuing to stare at the position they occupied, in which now, instead of the colour that was there, a completely different colour appears in the same figure. This cannot fail to appear: if one does not immediately perceive it, then this is simply attributable to a lack of the necessary attentiveness and the habit of concentration. The experiment achieves its greatest energy if one sticks a small piece of vividly coloured silk on a window-pane, where one will see it penetrated by light. – Without this autopsy, one will not actually understand what is said throughout the course of what follows, but will just plod along in mere words.[c,54]

First of all if one looks for 20 to 30 seconds[55] at a white disk on a black background, and afterwards looks at a dimmed or light gray surface, then a black disk on a bright background will present itself to one's eyes. This is just the phenomenon of the *extensive* divisibility of the activity of the retina. In this very spot on the retina, that is, that which had been affected by the white disk, the capacity for vision[a] is exhausted for a while; whereby, given a weaker stimulus, complete inactivity of the retina occurs. This can be compared to a drop of sulphuric ether evaporating on the hand, extracting all warmth from the spot until it is gradually restored. – Now, however, put a *yellow* disk in place of the white [27] one. Now, when one looks on the gray surface, instead of a black disk (which indicated complete inactivity of this spot on retina), a *violet* one presents itself. This is what Goethe fittingly calls the physiological colour spectrum,[b] as, indeed, he also presented all the relevant facts with great accuracy and exhaustive completeness; however, he did not go beyond this. But at present we are concerned with the rationale for the matter, that is, the physiological process that goes on here, and it becomes all the more earnest, in that, in my opinion, a genuine understanding of the actual essence of colour is really possible only through a correct explanation of this process, but the correct explanation clearly emerges as soon as one applies both one's eyes and one's mind. That is to say, from the intuition of the aforesaid phenomenon[c] and from an attentive comparison of that which follows in the eye from a white disk with that which follows in the eye from a yellow disk, there results for me the following explanation of this occurrence, an explanation that is susceptible of no other basis – nor requires one – than just the immediate judgement of the phenomenon itself, this judgement being simply the correct account of the phenomenon. For we have here reached the point at which the sensible impression has done its part and can do nothing further; henceforth, it is the turn of the faculty of judgement[d] to understand and articulate what is empirically given. However, our further treatment, which will follow this phenomenon through its various phases, will reveal the correctness of this explanation more and more clearly, while ultimately it will receive its complete corroboration through the proof of the matter to be presented in § 10.[56]

Unlike when the *white* disk was presented to the eye, when the *yellow* disk was presented, the *full* activity of the retina did not become excited and thus more or less exhausted, but the yellow disk was able to evoke only a part of the activity of the retina, leaving the other part behind, so that this activity of the retina then divided qualitatively and separated into two halves,[a] one of which presents itself as yellow, and the other, in contrast, now remains – without a new, external stimulus, but of its own accord – following as a *violet* spectrum.[57] Both of these, the yellow disk and the violet spectrum, as the separate halves of the retina's full activity in this phenomenon, [28] when taken together equal the whole of that activity; thus and *in this sense*,[58] I call each the *complement* of the other. Furthermore, since the impression of the yellow more closely approaches that of full light or of white[59] than the impression of the violet disk, then we must immediately add to this assumption a second: specifically, that the *qualitative halves* into which the activity of the retina here divides itself, are *not equal* to one another, but the yellow colour is a much greater qualitative part of that activity than its complement, violet. Note well, however, that *inessential* brightness and dimness,[b] which is the mixture of colour with white or black, is to be given special consideration below, is not meant here and has nothing to do with the matter. Every colour has a point of greatest purity and freedom from all white and black, and that point is represented by the equator on *Runge's* very cleverly thought-out *colour sphere*, lying equidistant between white and black poles. All the colours are placed on this equator with completely undetectable transitions from one to the other, so that, e.g., red on one side gradually passes into orange, orange into yellow, yellow into green, green into blue, blue into violet, the last of which returns again to red. But all of these colours show their full energy only at the equator, losing this energy toward the black pole through ever more dimness,[c] and toward the white pole by becoming ever paler.[d] So now, at this point of their greatest energy, as the equator represents them, each colour has an intrinsic and essential approximation to white or similarity with the impression of full light, and, conversely, a dimness[e] that corresponds to this in inverse proportion, thus an approximation to darkness.[f] Through this degree of brightness or dimness, which is essential and unique to each colour, they are already different from one another (even apart from their other differences) since the one is closer to white and the other is closer to black, and this difference is apparent. The intrinsic brightness essential to colour is very different from all brightness given to it through accidental admixture, since colour retains brightness in the state of its greatest energy, but accidental, admixed white diminishes this energy.[60] [29] So, e.g., violet is among all colours essentially the dimmest and least potent;[a] conversely, yellow is essentially the brightest and most cheerful: indeed, through admixture of white, violet can become very bright, but by this it receives no greater energy; moreover, it loses still more of what is unique to it and is changed into a pale, faint lilac similar to light gray that in no way can be compared to the energy of yellow, and, indeed, never even approaches that of blue. In contrast, one can impart any preferred degree of dimness to all and even to the intrinsically[b] brightest colours through admixture of black, which, however, imparts to them enforced dimness, but in any case, at the same time weakens their energy, such as when yellow becomes brown. From the potency[c] of colours as such, that is, from their energy, one can recognize whether they are pure and free of all black or white that is foreign to their essence. Now through its intrinsic, essential brightness, yellow reveals itself as an incomparably greater qualitative division of the activity of the eye than its complement, violet, which is rather the dimmest of all colours.

Now let the yellow disk used in the previous example be *reddish-yellow*; the violet of the spectrum that then appears will deviate just this much from red as the disk has approximated red: if the colour of this disk is exactly at the mid-point between yellow and red, that is, *orange*,[61] then the spectrum is pure *blue*. Indeed, orange is farther from white (as the full activity of the retina) than yellow, and conversely, blue, its complement, is proportionally closer to white than violet. Thus in this case the qualitative halves of the divided activity are not so disproportionate. They will finally be proportionate when the disk is *red*[62] and the spectrum becomes perfectly *green*. However, here Goethe's purple is to be understood as *red*, i.e., true, pure red, not at all tending toward yellow nor toward violet (rather like the colour of dried carmine on a white porcelain cup); this, however, is not Newton's red, which is prismatic red, a completely yellowish-red. This true, pure red is thus just as distant from white as it is from black, just like its complement, perfect *green*.[63] Accordingly, these two [30] colours represent the activity of the retina qualitatively divided into two *equal halves*. This explains their striking harmony – exceeding all others – the enthusiasm which they demand and evoke, and the extraordinary beauty which we acknowledge in each itself and all the more in both taken together; therefore, no other colour bears comparison with them, and I prefer to call these two completely equal halves of the qualitatively divided activity of the retina, red and green, colours *par excellence*[a] because they exhibit the phenomenon of the bi-partition[b] of the activity of the retina to the utmost perfection.[64] For in every other pair of colours, *one* is nearer to white than to black and the other the reverse; only in this pair is it not so: here the division of the activity of the retina is preeminently *qualitative*: in the case of this pair as with any other, the quantitative is not directly felt.[65] – Finally, if our disk, which was *red* just now, passes into *bluish-red* (violet), then the spectrum now becomes *yellow*, and we pass through the same circle in the opposite direction.[66]

Of course, the following ratios cannot be proved in this place, and so we must be satisfied to call them hypothetical:[*] but they receive such decided, immediate confirmation and persuasive power from intuition that hardly anyone will sincerely deny them in earnest, even Professor A. Rosas, who in the first volume of his manual of ophthalmology[c] appropriates what is mine by hook or by crook,[d] immediately introducing these ratios as self-evident[e] (this can be found in detail in *On Will in Nature,* 2nd edition, p. 15[f]).[67] As *red* and *green* are the two *completely equal* qualitative halves of the activity of the retina, so *orange* is ⅔ of this activity, and its complement, *blue* is only ⅓; *yellow* is ¾ of the full activity, and its complement, *violet*, is only ¼. It should not confuse us that violet, lying as it does in the middle between red which is ½, and blue which is ⅓, should nonetheless be only ¼. In this case, as in [31] chemistry, the quality of the compound cannot be predicted from the components. Violet is the dimmest of all colours, although it originates from two colours brighter than itself; thus, it also becomes brighter as soon as it tends toward one side or the other. This applies to no other colour:[68] orange becomes brighter when it tends to yellow, darker when it tends to red; green becomes brighter toward the yellow, darker toward the blue side; yellow, as the brightest of all colours, does in reverse the same thing that its complement, violet does: that is, it becomes dimmer, whether it tends to the orange or to the green side. – For the assumption of such ratios, expressible in whole and prime numbers, and indeed only in this way, perfectly explains why yellow, orange, red, green, blue, violet are fixed and conspicuous points in the otherwise completely continuous and infinitely nuanced colour circle as represented on the equator of Runge's colour sphere,[69] and these colours are always and everywhere recognized through their being designated by particular names. Indeed, between them lie innumerable nuances of colour, each of which could just as well have a unique name: so on what is the priority of these six based? – On the ground just mentioned: that in them the bi-partition of the activity of the retina presents itself in the simplest fractions. It is exactly as with the musical scale,[a] which can also be resolved into one howling note rising through imperceptible transitions from the lowest octave to the highest, but on which the seven steps are marked out (making them a *scale*,[b] *scala*) and have received specific names, abstractly as unison, second, third, etc., concretely as *do*, *re*, *mi*, etc., merely on the grounds that the frequencies of these very tones stand to one another in a rational, numerical ratio.[c] – It is noteworthy that Aristotle was already sensitive to the fact that a numerical ratio must lie at the basis of differences between colours, as between tones, and depending on whether these numbers were rational or irrational, the colours turned out to be pure or impure. Only he did not know on what that numerical ratio should actually be based. The passage is in the book *On Sense and the Sensible*[d] ch. 3, in the middle: ‘this then is to be assumed’, etc.[e] (I note that ‘τά μὲν’ should be inserted before ‘τρία γὰρ’.[f])[70]

Note: [32] One should not object that, in advancing a qualitative division of the activity of the eyes, as distinct from and in contrast to the merely quantitative, the terms ‘equal and unequal halves’ (that is, terms for a quantitative relation) are used. For any qualitative division is at the same time, in a subordinate sense, a quantitative one. Any chemical analysis is a qualitative division of matter, in contrast to a merely quantitative, mechanical division; but any qualitative division is necessarily at the same time quantitative, a division of mass as mass, just like the mechanical. –

The explanation of colour given here is thus essentially the following. *Colour is the qualitatively divided activity of the retina*. The difference of colours is the result of the difference of the qualitative halves into which this activity can be separated and of their ratio to one another. These halves can be *equal* only once, and then they represent true red[71] and perfect green. They can be *unequal* in innumerable ratios, and therefore the number of possible colours is infinite. For with the appearance of each colour, its *complement for the full activity of the retina* will follow as a physiological spectrum remaining behind[72] in the eye. This happens because the nature of the nerves[a] in the retina requires that, when the retina is forced by the nature[b] of an external stimulus to divide its activity into two qualitatively different halves, after the stimulus is removed, the other half automatically follows the half evoked by the stimulus, precisely because the retina has the natural[c] tendency to express its activity *completely*, and after it has been separated, to make itself whole again.[73] To the extent that a colour is the greater part of the full activity of the retina, its complement must be[74] a smaller part of this activity: i.e., to the extent that an essentially (not accidentally) bright colour is close to white, its spectrum will be dimmer (closer to darkness), and vice-versa.[75] Since the colour circle is a continuous, uninterrupted magnitude without inner boundaries, and all its colours pass into one another through unnoticeable nuances, then given only this point of view, there are as many colours as one may prefer.[76] However, among all peoples, at all times, there are found particular names for red, green, orange, blue, yellow, violet – names which [33] are understood everywhere to indicate specific, fully distinct colours, although these colours rarely appear in nature as pure and perfect; therefore, they must to a certain extent be known *a priori*, in a way analogous to regular, geometric figures, which certainly do not appear as perfect in reality, but which are still perfectly known and understood with all their properties.[77] Now although these names are mostly attributed to actual colours *a potiori*,[d] i.e., each actual colour is given the same name as that one of the six aforementioned colours it most closely approximates to, still everyone knows how to distinguish the colour to which the name belongs in the strictest sense and to indicate whether and how much it departs from it, e.g. whether an empirically given yellow is pure, or whether it tends toward green or orange: thus, for yellow and any colour, one must carry in oneself, independent of experience, a norm, an ideal, an Epicurean anticipation,[*] to which one compares any actual colour.[78] The key to this[79] is given to us simply and solely by the knowledge that in the case of the colours we have adduced there is a ratio of the two halves into which the activity of the retina divides that is expressible in certain whole and prime numbers, and which gives preference to these three *pairs of colours*, distinguishing them from all others. Accordingly our test of the purity of a given colour, e.g., whether a given yellow is exactly so, or whether instead it tends toward green or orange, is based on the strict accuracy of the fraction through which it is expressed. However, that we can judge this arithmetic ratio through mere feeling is confirmed by music, where the harmony is based on many greater, more complicated numerical ratios of simultaneous vibration whose tones can be judged upon mere hearing with the greatest precision and yet arithmetically, so that any trained, talented person is in a position to state whether a given note that has been played is exactly a third, a fifth, or an octave [34] of another. Just as it is possible to distinguish the seven tones of the scale from the innumerable others that lie between them only by the rationality of their frequencies, so in the same way it is possible to distinguish the six colours given unique names from the innumerable colours lying between them only by the rationality and simplicity of the fractions of the activity of the retina they represent. Just as when playing an instrument I test the accuracy of a tone by hitting its fifth or octave, so I test the purity of a perceived colour by evoking its physiological spectrum, the colour of which is frequently easier to judge than the colour itself; thus, I have first noticed, e.g., that the green of a grass tends starkly to yellow by seeing that the red of its spectrum tends starkly towards violet. If we did not have a subjective anticipation of the six principal colours providing an *a priori* norm, then the designation of them by proper names would be conventional (as is actually so with fashionable colours) so that we would not be able to judge the purity of a given colour, and, as a result, we would not be able to understand much at all, e.g., what Goethe says of true red: that it is not the usual scarlet red, which is a yellowish-red, but more that of carmine; whereas now this is clear and readily understandable.

The following schema is the result of my presentation:

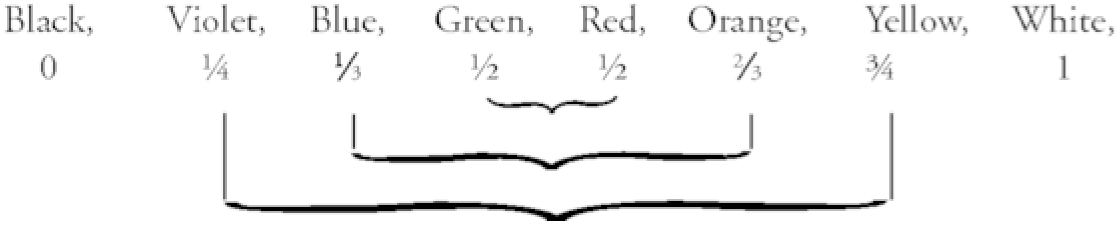

Figure 7

Since they have no fractions and thus present no qualitative divisions, black and white are not, in the proper sense, colours, as has always been recognized. They are given here merely as boundary markers to clarify the matter. Accordingly, the true colour theory always concerns *pairs of* *colours*, and the purity of a given colour is based on the accuracy of the fraction presented by it.[80] In contrast it is absurd to assume that there is a definite number of real,[81] [35] primitive colours,[a] e.g., seven, existing externally, independent of the activity of the retina and the ratios of its divisibility, together comprising the sum of all colours. The number of colours is infinite; however, each pair of two opposing colours contains the elements, the complete possibility, of all others. Herein lies the reason why, when one begins with the three basic chemical colours – red, yellow, and blue – each of them has as its complement the other two taken together.[82] For colour always appears as a *duality*[b] since it is the qualitative bi-partition of the activity of the retina. Hence, chromatologically,[83] one may not even speak of a single colour, but only of *pairs of colours*, each of which contains the full activity of the retina divided into two halves. The points of division are innumerable and are determined by external causes; to that extent, they are accidental for the eye. However, as soon as the first half is given, the other necessarily follows as its complement. This is comparable to the fact that in music the key is arbitrary but all the rest is determined by it.[84] From what has been said, it is a double absurdity to try to make the sum of all colours consist of an odd number, but the Newtonians always remain faithful over this, even when they depart from the number which their master fixed, now assuming five, now three primitive colours.

§ 6 Polarity of the retina and polarity in general

I believe that for the best reasons I can call the qualitatively divided activity of the retina, presented above, a *polarity*, without adding yet another abuse to the frequent abuses which this concept had suffered in the period of Schelling's philosophy of nature.[85] So this unique[86] function of the retina is considered from a *single* point of view that groups it with other phenomena with which it has the following in common: that two phenomena, opposed at the species level but identical at the level of the genus,[a] essentially condition one another in such a way that neither one nor the other can either be posited or abolished without the other, yet they only exist separately and in opposition to one another, and the union toward which they constantly strive is precisely the end and disappearance of both. However, the polarity of the retina [36] is different in that what for other phenomena of polarity is in space, that is, is simultaneous, is for it in time, or successive. Furthermore, it has the special characteristic that the point of indifference[b] is alterable, although within certain limits. The concept of a *qualitatively divided activity* advanced here, associated with the most evident example, might even be the fundamental concept *of all polarity*, under which magnetism, electricity, and galvanism can be subsumed, each of which is only the phenomenon of an activity divided into two halves that are conditional upon one another, have an affinity for one another, and strive after reunification. In this sense, we can cite an expression in Plato's words suitable to all such phenomena: 'after our original nature was cut in two, each half longed for the half belonging to it, and would come to it again.'[c] They also come under the great Chinese contrast of *yin* and *yang*.[87] As it is most intimate to us, the polarity of the eye could even elucidate the inner essence of all polarity in many respects. When the customary notation for the other polarities is also applied to this one, there will be no hesitation in attributing + to red, orange, and yellow, and, in contrast, – to green, blue, and violet because the brightest colour and the greatest numerical fraction of the negative side, green, is exactly equal in quantity of activity to the dimmest colour and the smallest fraction of the positive side, red. This polar contrast must express itself most clearly with the most perfect division of the activity of the retina, which is the division into two *equal* halves, thus, red tires the eyes, and green, in contrast, rests the eyes. – Whether the choroidea, or *pigmentum nigrum*, could in some way take part in such qualitative division of the activity of the retina could only be discovered through a *post-mortem* examination[d] of the eyes of such persons who have lost the capacity to see colours – to which I will return later.[88]

[37] § 7 The shadow-like nature of colour[89]

Now the following consideration essentially belongs to the theory of colour already advanced: it is very important for this theory, as well as for Goethe's colour theory, and, taking all that has been said as settled, it is a derivation *a priori* of the essential *skieron*[a] of colours, as Goethe so vigorously maintained and repeatedly urged. It is well known that with this expression he denotes their nature as like a shadow or gray, according to which they are always brighter than black and dimmer than white.

With the qualitatively divided activity of the retina, we have found the appearance of one half to be essentially conditioned through the *inactivity* of the other, at least in the same spot. But, as I have said above, *inactivity* of the retina is *darkness*. Accordingly the qualitative *half* of the activity of the retina that appears as colour must be accompanied by a certain degree of *darkness*, thus by some dimness. Now it has this in common with the *intensively* divided activity of the retina, which we have recognized above as gray or half-shade, and Goethe had correctly understood and denoted by the expression *skieron* exactly this commonality between that which is qualitative and that which is intensive. However, there is the following very significant difference here. That the activity of the retina, according to *intensity*, is only partial, leads to no specific or essential alteration of this activity and occasions no unique effect,[b] but it is just an incidental, gradual diminution of the full activity. Conversely, with the *qualitative* partial activity of the retina, the activity that appears as one half has as its essential and necessary condition the inactivity of the other half, since it exists only through this contrast. But from this division and its various ratios arises a characteristic stimulation[c] – the cheerful and delightful impression of colour, as contrasted with the dreary gray that is equal to it in brightness – and colour's quite specific nature that remains the same despite all differences of colour. This depends [38] just on the fact that, by means of a polar separation, the vivid activity of one half has as its support the other's being completely at rest. This also explains why white appears so remarkably jejune when found between colours, while gray appears so doleful, and black so morose. Likewise, it is understandable why black and white, the absence of the stimulus of colour, symbolize mourning, black for us, white for the Chinese.[90] – As a result of the difference between the merely intensive and the qualitative division of the activity of the retina, we could *by way of comparison*, appropriately call partial shade and gray a merely mechanical mixture of light and darkness, albeit an infinitely fine mixture; in contrast, we can view colour, consisting of the qualitative partial activity of the retina, as a chemical fusion and interpenetration of light and darkness, for both here mutually neutralize one another and because each gives up its unique nature, a new product arises, bearing only a distant similarity to the two, but having instead an obviously unique character. This marriage of light with darkness, necessarily emerging from the qualitatively partial activity of the retina, the phenomenon of which is colour, thus confirms and explains what Goethe observed appositely with perfect correctness: *that colour is essentially something shadow-like, a skieron*. But over and above Goethe's principle, this marriage of light with darkness teaches that that which plays the role of the *skieron* in every colour present to the eye, as the cause of its darker nature, is what then appears as a subsequent spectrum in the eye – but in this spectrum itself, the previously present colour now undertakes the role of the *skieron,* its content making up the present deficit.

§ 8 Relation of the theory presented here to Newtonian theory[91]

In the shadow-like nature of colour that has been explained here, one could to a certain extent seek the source of the error of Newtonian theory: 'that colours are parts of the ray of light dispersed through refraction'. That is, he saw that colour is dimmer than [39] light or white, but took as extensive what is intensive, as mechanical what is dynamic, as quantitative what is qualitative, as objective what is subjective,[92] because he[93] sought in light what should have been sought in the eye; hence, he thought that a ray of light is composed of seven coloured rays in which colours inhere as an 'occult quality',[a] according to laws independent of the eye, equal in their relation to the seven intervals of the scale (Now that you have got Sparta, embellish it![b]). That in doing so he selected the number seven simply and solely out of preference for the scale is not subject to the slightest doubt; he need only have opened his eyes in order to see that in the prismatic spectrum there are absolutely not seven colours, but only four, and that at a greater distance from the prism the two in the middle, blue and yellow, are superimposed and thereby form green. That opticians count seven colours in the spectrum even now is the height of absurdity. If one were to take it seriously, we would be justified, forty-four years after the appearance of Goethe's colour theory, in calling it a shameless lie; by now we have been sufficiently patient.[94]

Despite all this, it is not to be denied that in the Newtonian error there is a distant analogy, a presentiment[a] of the truth,[95] and this results precisely from the point of view of our observation. According to this, we have, instead of *a divided ray of light, divided activity of the retina*; however, instead of seven parts we have only two, or again innumerable, depending on how one takes it. For the activity of the retina is halved by each possible colour, but the points of division are likewise innumerable, and from these arise infinite nuances of colours, even apart from their being pale or dim, which we will soon discuss. Hence in this way we would be led back from a *division of the sun's rays* to a *division of the activity of the retina*. But generally this mode of observation which leads back from the observed object to the observer, from the objective to the subjective,[96] can be recommended by a pair of the most brilliant examples in the history of the sciences, and can be proved correct, since

> In like manner, if it be allowed to compare the small with the great[b] [40]

Copernicus replaced the movement of the entire firmament with that of the earth, and the great Kant replaced the absolute nature of all things, objectively known and posited in ontology, with the cognitive forms of the subject. 'Know thyself'[c] stood on the temple at Delphi!

Note: Now that we have become aware that in our explanation of colours we have returned from light to the eye (so that for us colours are nothing more than actions of the eye itself appearing in polar contrasts), this may be the place to observe that a presentiment of this has always existed insofar as philosophers have always surmised that colours belong much more to the eye than to things; for *Locke*, in particular, always placed colours at the head of his secondary qualities of things, and in general, no philosopher[97] at any time wanted to consider colour to be a real, essential component of bodies, while many have preferred to consider not only extension and weight, but also any properties of surfaces (soft and hard, smooth and rough, and, if need be, even the smell and taste of a thing) to be real, constitutive components of a thing, rather than colour. Conversely they had to acknowledge colour to be something adhering to a thing, as something belonging to its properties, but also to be something that occurs absolutely the same in the most diverse things and, then, too, differently in similar things – so that it has to be non-essential. All of this makes colour a difficult, perplexing, and thus, vexing topic. For this reason, an ancient writer said, as Goethe reported: ‘if one holds a red cloth before a bull, then he will go mad; but if one so much as speaks of colour to a philosopher, he begins to rave.’[a]

An essential difference between my theory and the Newtonian still consists in the fact that the latter theory (as was previously mentioned) claims that any colour is merely an ‘occult quality (exciting colour)’[b] of one of the seven homogeneous lights, gives it a name, and then lets it go its way, with the result that the specific difference among colours and the unique effect of any one of them remains completely unexplained. My theory, conversely, provides an explanation of these properties and makes comprehensible to us wherein lies the ground of the specific impression and the particular effect of any single colour, since it teaches us to recognize colour as a completely determined part of the activity of the retina, expressed by a fraction, and further as belonging either to the + side or to the − side of the [41] division of this activity. So for the first time we achieve the approximation of our idea about colour to the way it is sensed, an approximation that previously was always missed. For even Goethe was content to divide colours into warm and cold and leave what remains for his aesthetic observations.[98]

Presented in outline, this theory of colour, whose result is that colour is a qualitatively partial activity of the retina, immediately (and especially when one considers the aforementioned analogy with the erroneous Newtonian theory) leads to the question of whether or not the full activity of the retina – i.e., the effect of pure light, or of white – can be produced upon the reestablishment of the two qualitative halves of the activity of the retina which present themselves to us in every colour and its physiological complement – just as, according to Newton's assertion, pure light or white can again be restored from the seven colours of the complete ray of light. Now to what extent this question might be answered in the affirmative with respect to theory and practice can be better shown after the theory of colour presented here is completed by the following discussion that pertains to it.

§ 9 Undivided remainder of the activity of the retina[99]

Apart from the relation of colours to one another in the colour circle, which is self-contained and blended through continuous transitions, we also note, as was already touched upon (§ 5), that each colour in itself has its maximum energy, represented on the equator of Runge's colour sphere,[100] and from this point each colour is lost by fading into white to one side and by dimming into black to the other. According to our account, this is only to be explained in the following way. While the full activity of the retina, occasioned by an external stimulus, divides itself qualitatively and thus some colour arises, one part of this full activity can still remain unseparated.[a] I do not speak of the part of the retina that can remain in undivided activity while the activity of another divides itself [42] qualitatively (this will come under discussion below); rather, I say that in producing a colour by qualitatively dividing, the activity of the retina (regardless of whether it is over the entire surface or a part thereof) can *at the same time retain an undivided remainder*, and this can in turn either be totally active or totally at rest, or between the two, i.e., it can be intensively active to some extent. Now in proportion to this intensity, colour will appear pale or dark in many gradations instead of in its full energy. One can easily understand that in this case there is a union[b] of the intensive activity of the retina with the qualitative. This is made most obvious by the fact that if one observes a colour that is dimmed or weakened by a darkness inessential to it,[c] its complement, which shows as a spectrum, appears just as weakened by paleness. If one calls a colour vivid, energetic, glaring, then as a consequence of what has been said, this actually means that in the presence of this colour the full activity of the eye is purely divided, without leaving an undivided remainder.

§ 10 Production of white from colours[101]

I now return to the question posed above, about the restoration of the full activity of the retina, or of white, through the union of two opposing colours. It follows immediately that if these colours were darkened, i.e., a part of the activity of the retina were unseparated and at the same time remained inactive, this darkness is abolished by the union, and thus gray remains. But if the colours were in their full energy, i.e., if the activity of the retina were divided without remainder, or if the colours were pale, i.e., if the unseparated remainder were active, then as a consequence of our theory (which considers two opposing colours to be mutual complements that make up the full activity of the retina, through whose division they arose) the union of these colours must without a doubt produce the full activity of the retina, and so the impression of pure [43] light or of white. Applied to an example, this can be expressed in a formula:

red = full activity of the retina − green
green = full activity of the retina − red
red + green = full activity of the retina = the effect of light or of white

Even a practical demonstration of this poses no difficulty as long as we stick with colours in the strictest sense, i.e., with the affections of the eye. But then we are only concerned with physiological colours; moreover, the result of the experiment would just be their failure to appear, and this experimental proof might seem too immaterial and ethereal to many people. In any case, it is just this. If one, e.g., looks at vivid red, then a green spectrum will follow; if one looks at green, then a red spectrum follows. But now, after having seen red, if one immediately looks at real green with the same place on the retina and for just as long, then neither spectrum appears.

Real conviction can only be achieved through the experimental production of white from physical or even from chemical colours.[a] But this is always subject to a particular difficulty. If we want to stop at these colours, then we actually have moved from the colour to the cause that affects the eye as stimulus and induces it to produce colour, i.e., to divide its activity qualitatively. Below we will discuss the cause of colour in this sense and its relation to colour in the strictest sense. At this point, only the following is relevant. As a result of our theory, the production of white from two colours depends specifically on the two colours' being those into which the activity of the retina has been separated simply and solely on physiological grounds; that is, they are a physiological pair of colours that in this sense only are exclusively to be called complementary colours. Two such colours must actually be reunited on the retina itself to produce white; that is, the two separate [44] halves of the activity must be *simultaneously* stimulated, whereby their full activity, white, is then produced. This can occur only when both of the external causes simultaneously excite the complementary colour of the other in the eye, yet each separately affects one and the same place on the retina. Now this is possible only under particular circumstances and conditions. First of all, it cannot happen when two chemical colours are mixed together, for these then work in combination, not separately.[102] In addition, in the case of an external, material cause of colour (i.e. in chemical or physical colour), a concrete cause must be found, a corresponding material representative[a] not only for the action[b] of one half of the retina's activity, but also for the repose of the other half (which appears as the essential *skieron*[c] of the colour), and even after the union of opposed colours the cause must persist as matter, continue to produce its effect, and always cause gray. As soon as colours have disappeared through the union of opposites, this material representative gives up the role it played in the production of these colours, but now remains as a death's head[d] or as the cast-off husk of these colours, and as it previously helped with the *qualitative* division of the activity of the retina, so it now affects an *intensive* partial activity of the same, i.e., gray. Now because of this, with chemical colours, on account of their completely material nature, the production of white can never be demonstrated[e] from a pair of colours unless some special modifications occur: below I will cite an example of this production given such modifications. In contrast, with physical colours, indeed in some cases with the union of physical and chemical colours, this demonstration can readily be carried out. Nevertheless, with physical colours, if a turbidity of a coarse material nature is interposed (perhaps one also not quite homogeneous and in places impenetrable, like a smoked glass, or a sooty smoke, or a parchment, etc.), then for the aforementioned reasons the experiment is not wholly successful. This is in contrast with the case of prismatic colours: for here the turbidity, as a mere secondary image, is of such pale[a] nature that, upon the union of opposing colours, if [45] it is not effectively abolished, then either it no longer remains visible as soon as it is no longer significant because of the position by which it produced colours, or, like any accumulated turbidity, it just produces white. – In an objective prismatic experiment, true red (Goethe's purple)[103] can be produced by unifying violet from one prism with the yellowish-red from another, and when green is directed on this from the middle of a third prism, the spot appears *white*. Goethe himself cites this experiment[b] (Vol. I, p. 600, § 556); however, he will not admit it to be an example and proof of the production of white from colours because of his otherwise legitimate polemic against Newton. But the reason he advances against it – specifically that here the three-fold sunlight[c] makes invisible the gray which actually exists – is in fact not convincing. For each of the three prismatic colours here already contains the *skieron* as well as the sunlight itself. Now just as each of these three *skiera* is itself still visible in each of the three colours individually, despite the light[d] combined with it, so when three such *skiera* are united together with their three lights,[e] the whole cannot gain in brightness. If divisor and dividend are multiplied by the same number, the quotient does not alter. Thus it is not the increased illumination, which is outweighed by the increased darkness, but the contrast of colours that here produces the impression of pure light or white. One can conduct this experiment[f] in an easier and clearer way, and one more obviously not subject to the Goethean objection. Superimpose two prismatic colour spectra, so that the violet of the first covers the yellow of the second and the blue of the first covers the orange (Newton's red)[104] of the second; then, from the union of each of these two pairs of colours, white arises too; moreover, the white spot will be twice as wide as in the previous experiment because both pairs of colours lie next to one another. This is Newton's 13th experiment of the 2nd part of the first book.[g] Nevertheless it certainly is not consistent with his theory, for he may now (as he does alternatively on occasion) accept seven or innumerable [46] homogeneous lights, yet here it is always just two lights that are superimposed, not seven or innumerable.[105] This experiment can also be conducted with a *single* prism. On a black background, place two white squares, one larger and one smaller, with the smaller three or four lines under the other. Observe these through a prism, and then move slowly backwards until the violet of the smaller covers the yellow of the larger and the blue of the smaller covers the orange (Newton's red) of the larger, so that the whole spot will appear white.[106] Thus with prismatic colours the production of white can appear with all three principal pairs of colours. Furthermore, the experiment can even be conducted subjectively by substituting a chemical colour; only then one must choose such a pair of colours as consist of the *most unequal* qualitative halves of the activity of the retina, that is, yellow and violet; and indeed, the greatest, that is the essentially brightest half, must be the chemical colour, while the lesser, that is the darker, must be the physical colour, because only then does the persistent, material *skieron* of the chemical colour not have sufficient mass to have noticeable effect. Through a prism look at an energetic, yellow, fully uniform, and spotless piece of paper on a white background: the place where the edge of the violet covers the yellow will appear completely *white*. The same occurs if the objective spectrum is allowed to fall on a yellow piece of paper; however, on account of the indistinct edges of the objective spectrum, the result is not so striking. With other pairs of colours this experiment is less successful, yet the brighter the chemical colour essentially is, the better it works. A similar experiment occurs, often even spontaneously, when in May the Spanish lilac – especially the violet-blue specimens – that adorns gardens and frequently even rooms in vases (*Syringa vulgaris*, called in lower Saxony *Sirene*, in southern Germany *Nägelchen*, in France *lila*) appears white in candlelight, for the lilac's bluish violet is perfectly complemented by the candle's yellow illumination, which inclines toward orange.[107] Finally, white can be produced even from two chemical colours under the special condition that, just like physical colours, they are penetrated by light and therefore their *skieron* cannot by itself produce any noticeable effect. This happens as soon as the *skieron* loses its significance, when the colours [47] disappear through the elimination of the contrast; e.g. through the unity of a transparent colour with a reflected colour, when one casts a light through red-yellow glass on a mirror of blue glass. It works even with *one* non-transparent colour: cast a gold coin and a silver coin in a vessel of blue glass: the former will appear white, the latter blue. The same occurs when a piece of paper coloured blue on both sides is mirrored in polished copper, or when a rose is simply illuminated by the light streaming through a green silk curtain. And, finally, in an experiment mentioned by *Helmholtz*, white can be produced from two non-transparent chemical colours. Helmholtz (in his habilitation thesis[a] ‘On the Theory of Composite Colours’, 1852, p. 19[a]) explains the following method of producing white from complementary colours: place a piece of plate glass vertically; on one side place a red piece of paper, something like a wafer; on the other align a green one so that when viewed the mirror image of the green covers the red – this will produce white.[108] However, in all of these experiments, the two colours must be of equal energy and equal purity. Finally, by way of exception, all white glass appears to be a white produced by the actual combination of two chemical colours, but found in a transparent state, as I have already mentioned in the first edition, that is, in 1816.[109] In glass works, as is well known, almost all glass turns out originally green, the cause of which is its iron content. But this green, tending toward yellow, is only found in inferior glass: to eliminate it and to produce white glass, an addition of manganese dioxide is needed, an empirically-discovered remedy. However, manganese oxide itself colours the glass violet-red, as is to be seen in the red glassy fluxes and also when, in the manufacture of white glass, too much manganese dioxide is added to the green mass, so that the glass gleams reddish, as in many beer glasses and especially in English window panes.

The examples cited above may suffice to confirm what necessarily follows from my theory: that from two opposite colours white is certainly produced[110] [48] only when one knows how to arrange it so that the two complementary colours, stimulated by external causes, but without being directly mixed with each other, *simultaneously* affect *the same spot* on the retina. But now this production is a striking proof of the truth of my theory. The fact itself is never denied, but the true cause is not understood; rather, it and the fact of the physiological colour spectrum are attributed to a completely false interpretation consistent with Newtonian pseudo-theory.[b] For the first, as is known, is said to depend on the reunification of the seven homogeneous lights (but more about this later); in the case of the physiological spectrum, however, many still apply the explanation that, soon after *Buffon* discovered the spectrum, Father *Scherffer* provided in his *Treatise on Accidental Colours*, Vienna, 1765,[c] and earlier in *de coloribus accidentalibus*, 1761. It goes like this: the eye, tired of lengthy viewing of a colour, loses receptivity for this sort of homogeneous light rays; therefore, it then immediately experiences a white, only with the exclusion of just these homogeneous colour rays, for which reason it no longer sees the colour ray as white, but instead experiences a product of the remaining homogeneous rays that made up white together with that former colour; thus, this product is now supposed to be the colour appearing as physiological spectrum. This explanation of the matter can be recognized as absurd from its assumptions.[a] For after viewing violet the eye sees a *yellow* spectrum on a white surface (but still better, on a gray one). After the ejection of violet, this *yellow* would have to be the product of the remaining six homogeneous lights, thus of red, orange, yellow, green, blue, and indigo combined; just let someone try to brew yellow out of these. Above all, Mr *Pouillet* tried it; as a true and sworn arch-Newtonian, he did not blush to write in his famous *Elements of Physics*,[b] Vol. 2, p. 223, the ugly absurdity: orange and green (hence, the three basic chemical colours) make yellow.[c] One could say that these chromaticists are blind; better yet, they are simply blinded by faith. Actually, however, for them colours are mere words, [49] mere names, or even numbers: they do not actually know them; they do not see them. I can never forget that in *Melloni*, some twenty-five years ago, in a list of all colours and their nuances drawn up by him, I found cited a *greenish-red*![*] – From the above-mentioned mixture of the six remaining colours, there will never be anything other than the colour of mud, instead of yellow. Moreover, yellow is indeed itself a homogeneous light: how, then, could it first be the result of that mixture? But the simple fact that *one* homogeneous light, in itself, is the perfect complementary colour of another, following as its physiological spectrum, as yellow is of violet, blue of orange, red of green, and vice-versa, overthrows the Scherfferian explanation because it shows that whatever the eye sees on a white surface after staring at a colour is anything but the combination of the six remaining homogeneous lights, but is always just *one* of them: e.g. after looking at violet, yellow. It may also not be assumed that upon the removal of *one* of the seven homogeneous light rays, the remaining six in conjunction would now present nothing more than the colour of any one of the others among them, for then a cause without an effect would have to be accepted, since the five other colours would not have altered the colour of that single light ray. The inadmissibility of this explanation already follows from the fact that the physiological spectrum is not only seen on a white background, but also is seen perfectly well and clearly on a completely black and even shadowed background, indeed, even with eyes shut and covered with the hand. [50] *Buffon* had already stated this, and *Scherffer* himself admits it in § 17 of his work. Now here again we have a case where, as soon as a false theory reaches a certain point, nature immediately steps in the way and throws the lie in its face. *Scherffer* too becomes very disconcerted at this and admits that herein lies the greatest difficulty. However, instead of becoming doubtful about his theory, which can never be compatible with this, he grasps at all kinds of miserable and absurd hypotheses, squirms pitifully, and ultimately lets the matter rest. Finally, the physiological spectrum presents itself on any coloured surface where, of course, a conflict between its colour and the physiological colour arises; consequently, when one looks at a blue piece of paper, having in the eye a yellow spectrum excited by staring at violet, green appears, arising from the combination of blue and yellow, irrefutably proving that the physiological spectrum *adds* something to the background on which it falls, but does not *subtract* something from it, since green does not appear from blue through some kind of subtraction, but through an addition, namely, of yellow. – Moreover, a white, and still more a gray, or a shaded surface, is obviously especially conducive to the appearance of a physiological spectrum because what generally stimulates the activity of the eye must also accommodate the spontaneous appearance of its qualitative half; a gray surface, which in itself evokes only a part, that is an intensive part of the activity of the retina, must be especially favourable to the already determined appearance of a qualitative part. This is also consistent with what Goethe noted (Vol. 1, p. 216[a]): that a chemical colour requires a white background in order to appear. – That *shade*, when illuminated with a colour, shows the complement of this colour only when a second, colourless illumination brightens it, is due to the fact that every shade is only half-shade, and this shade, therefore, is tinged, although only weakly; when a colourless illumination falls on this hue,[b] it becomes attenuated and weakened to a degree, so that, when it strikes the eye, the eye can produce the complement of the coloured [51] illumination. – In any case, the well-known experience that we most clearly and easily catch sight of a physiological spectrum early in the morning, just upon awakening, speaks against the Scherfferian explanation of the physiological spectrum; for at just this time, as a result of long rest, the retina is at its greatest powers and so is least inclined to be tired by staring at a colour for some seconds and to be deadened to the point of insensitivity to the same colour. – Everything advanced here proves irrefutably that the physiological spectrum is generated by the intrinsic power of the retina and is attributable to the action of the retina, but is not a defective and atrophied impression of a white surface that occurs because of the retina's exhaustion. But I must thoroughly refute this Scherfferian explanation because it still has value among the Newtonians. With regret, I mention that even *Cuvier* has cited it in his *Comparative Anatomy, Lecture 12, Article 1*;[a] wherein he proclaims it to be his own new discovery, and it has been praised in *Jameson's Edinburgh New Philosophical Journal*, 1828, April–September, p. 190. It is hardly worth mention that common writers of compendia serve this up again and again, and we need not be surprised that in a book of this type, Prof. Dove gives it for our benefit even in the year 1853, in his *Presentation of Colour Theory*, p. 157.[b]

Now, however, all the teaching about *complementary colours* by all present-day physicists, and all their chatter about it, is based on this Scherfferian theory. As true incurables, they still always understand the issue *objectively* in the Newtonian sense; accordingly, the *complement* that they frequently mention always refers only to the Newtonian spectrum of seven colours and indicates one part of these seven, separated from the others, which are thereby completed to white light as the sum of all the homogeneous lights, just as *Pouillet* expounded at length in his *Elements of Physics*, Vol. 2, § 393[c]. [52] However, this construal of the issue is fundamentally false and absurd, and it is unforgivable that it is still held in esteem and imposed on the young forty-four years after Goethe's colour theory, and forty years after this theory of mine.[111]

However, conversely, it is not to be denied that Goethe, in unconditionally denying that white is produced from colours, went too far and deviated from the truth. He did so, however, only because he constantly had erroneous Newtonian theory in mind, and against this theory he correctly maintained that the aggregate of colours does not lead to light since each colour is related to both darkness and light; thus, through this denial he especially wanted to maintain the *skieron* of colour; and although he knew that the colours that were physiologically necessary were destroyed as colours when mixed, he explained this principally from the process of mixing the three basic chemical colours, wanting to maintain that gray was the unconditional and essential result. Because he had not pressed to the ultimate ground of all colour phenomena,[a] which is purely physiological, and because he had achieved his aim with the supreme principle of all *physical* colours,[112] he still could not see that the true, ultimate ground of these was that opposite colours, when unified, abolish one another because they are qualitative halves of the divided activity of the retina that have again been combined; similarly, he still could not see that the real ground and inner essence of the *skieron*, inseparable from colours, which he so greatly stressed, is nothing other than the phenomenon of the inactive half of the activity of the retina at rest and, that, in any case the *skieron* must absolutely disappear through the reunification of both halves of the activity of the retina, so that ultimately, gray – which the chemical colours leave behind upon their disappearance through the union of opposites – is not a colour itself, but only the material condition belonging to the physical colours' crude material cause, and with reference to colour can as such be called accidental. In general it would be the greatest unfairness and ingratitude if one were to reproach Goethe for this misunderstanding in a far-ranging work which uncovers so many errors and teaches so many new truths. The true reason for the production of light from two colours could only become obvious as a consequence of my theory. 'Many will investigate it and knowledge will be increased.'[b]

But conversely [53] one cannot in any way maintain that Newton had come across the truth on this point. For although it must be admitted that he taught in general that white can be produced from colour, there still remains the sense in which he said this, that is, the fundamentally false theory[113] that the seven colours are the basic constituents of light, which is recomposed again by their union. He had no acquaintance with, nor even a suspicion of, the physiological opposition of colours, on which their entire essence[c] depends and with reference to which the production of white, or the full impression of light from colours, can uniquely take place (indeed from *two*, from any arbitrary *pair of colours*, not from seven specific colours); and because of this he never knew the true nature[d] of colour. Moreover the production of white from two colours proves the impossibility of the same from seven. Thus to Newton's credit one can say no more than that by accident he had come near to expressing the truth. But because he advanced this in a false sense and in support of a false theory, the experiments through which he wanted to verify it are also for the most part insufficient and false. In just this way he led Goethe to deny too much in contradicting this false theory. And thus the strange case has occurred that the true and actual fact of the production of the full impression of light or of white by the union of colours (setting aside whether it be two or seven) was asserted by Newton on incorrect grounds and in service of a false theory, but was denied by Goethe in connection with an otherwise correct system of facts. If this were true in a Newtonian sense, or Newton's theory were generally correct, then first of all any combination of two colours he assumes to be primary must immediately yield a brighter colour than any of them singly because the combination of two homogeneous parts of the white light broken down into parts would immediately be a step toward the restoration of a white light. Only this is never the case. That is, if we combine in pairs the three fundamental chemical colours, of which all of the remaining colours are composed, then [54] blue with red yields violet, which is dimmer than each of the two; blue with yellow yields green, which although somewhat brighter than the former, is still much dimmer than the latter; yellow with red yields orange, which is brighter than the latter, but dimmer than the former. This actually contains sufficient refutation of the Newtonian theory.

However, the correct, factual, conclusive, and inescapable refutation of Newton's theory is the achromatic refractor;[a] which is they *Newton* also very consistently took such a thing to be impossible. If white light consists of seven types of light, each of which has a different colour and at the same time a different refrangibility, then refraction is inseparable from the isolation of the lights, and the degree of refraction and the colour of each light are necessarily inseparably associated; thus, when light is *refracted*, it must appear as *coloured* no matter how varied and complicated the refraction – be it moved back and forth, up and down – so long as all of the seven rays are not again brought together in one spot, when according to Newtonian theory white is recomposed and at the same time all effect of the refraction ends; that is, everything is again brought back in its place. But as the discovery of achromaticity brought to light the opposite of this result, the Newtonians, to their embarrassment, clung to the explanation which we feel tempted, as does Goethe, to consider senseless verbiage; for with the best of intentions it is very difficult to attribute to it any intelligible sense, i.e., anything that can in any way be intuitively imaginable. For namely, along with refraction of colours, there is still supposed to take place a *dispersion of colours*[a] different from the refraction, and this is to be understood as a distancing of individual coloured lights from one another, the separation of these lights, which is allegedly the proximate *cause* of the lengthening of the spectrum. This spectrum, however, is by hypothesis[b] the *effect* of the differing refrangibility of these coloured rays. Thus if this so-called dispersion[c] (i.e. the lengthening of the spectrum, or of the image of the sun[d] after it is refracted) depends on the fact that the light consists of differently coloured lights, the nature of each of which has a different refrangibility, i.e., [55] each refracts into a different angle, then the specific refrangibility of each light, as its inseparable, essential property, must still inhere in the light; thus, a particular homogeneous light will always refract in the same way just as it is coloured in the same way. For the Newtonian homogeneous ray of light and its colour are absolutely one and the same, it is just a coloured ray and nothing else; hence, where there is the ray, there is the colour, and where there is the colour, there is the ray. If, by hypothesis, it lies in the nature of each differently coloured ray also to be refracted at a different angle, then its colour will accompany it in this or any angle; consequently, with any refraction the different colours must appear. Thus in order to make sense of the explanation favoured by the Newtonians, 'two different kinds of refracting media can refract light with equal intensity, but disperse the colours to different degrees', we must assume that, while crown and flint glass refract whole light, that is, white light, with equal intensity, nonetheless the parts of which this whole throughout consists are refracted differently by flint glass from crown glass, thus altering their refrangibility. That's a hard nut to crack! – Furthermore, they must alter their refrangibility in such a way that, on the application of the flint glass, the most refrangible rays still achieve ever stronger refrangibility; in contrast, those least refrangible assume an even weaker refrangibility; so this flint glass must augment the refrangibility of certain rays and at the same time diminish that of certain others, while the whole, which consists only of these rays, still retains its previous refrangibility. Nevertheless, this dogma, which is so difficult to comprehend, is always held in universal credit and respect, and to this very day it can be seen from the writings about optics from all nations how seriously the difference between refraction and dispersion[a] is discussed. Now for the truth!

The most immediate and essential cause of achromaticity, produced by means of the combination of a convex lens made of crown glass and a concave lens made of flint glass, must be a *physiological* cause, just as with [56] all production of white from colours; specifically, it must be the production of the *full* activity of the retina at the spots affected by physical colours since here, certainly not seven, but just two colours, namely two colours that augment this activity, are superimposed on one another, so that a pair of colours are again united. In the present case, this is brought about objectively, or physically, in the following way. Through a double refraction in opposite directions (by means of a concave and a convex lens) the opposite colour phenomenon arises, namely, on one side a yellowish-red band with a yellow edge and on the other side a blue band with a violet edge. At the same time, this double refraction in opposite directions superimposes the phenomena of coloured bands so that the blue band covers the yellowish-red and the violet edge covers the yellow edge, whereby these two physiological pairs of colours, namely that of $^{1}/_{3}$ and $^{2}/_{3}$, and that of ¼ and ¾ of the full of activity of the retina[b] become reunited, and hence colourlessness is reproduced. Thus this is the *proximate*[c] cause of achromaticity.

But now what is the *more remote*[d] cause? Since the requisite dioptric result – namely, an excess of the refraction remaining *colourless* – is brought about by the fact that the flint glass, working in an opposite direction, is able to neutralize the colour phenomenon of the crown glass by an equally broad colour phenomenon opposing it, even with a significantly smaller refraction, because its own colour bands and edges originally are significantly wider than those of the crown glass; hence, the question arises: how does it happen that two different refracting media, with equal refraction, yield such very different breadths of colour phenomena? – A very satisfactory account of this consistent with Goethean theory can be given, that is, if this is worked out in somewhat more detail and more clearly than Goethe himself did. His derivation of the prismatic colour phenomenon from his supreme principle, which he calls the urphenomenon,[a] is completely correct, only he had not sufficiently reduced it to details, while without a certain precision[b] there is no satisfaction in such things. He [57] quite correctly explains this phenomenon of a coloured band accompanying a refraction as the result of a secondary image accompanying the primary image displaced by refraction.

First a word about the origin of secondary images accompanying the primary image in refraction. ‘Nature takes no leaps’:[c] so reads the law of continuity of all alterations, by means of which no transition occurs in nature with complete abruptness,[d] be it in space, or in time, or in degree of any property. Now upon its entry into the prism and then upon its exit, that is, twice, light is suddenly deflected from its straight path. Is it to be supposed that this occurs so abruptly and so sharply that the light does not undergo the least mixture with the surrounding darkness, but that in turning through significant angles through this darkness, the light preserves its edges most sharply – so that it passes through in a perfectly unmixed purity and remains completely whole? Rather, is it not more natural to assume that, upon the first, as well as upon the second refraction, a very small part of this mass of light fails to take the new direction fast enough, and so becomes somewhat separated, but at the same time, retaining the memory of the path it just left, this small part accompanies the primary image as a secondary image, suspended somewhat above the primary image on the first refraction and somewhat below the primary image on the second? For this reason, it has also been noted (Birnbaum, *The Realm of the Clouds*,[e] p. 61) that there is a diminution of light necessarily connected with each refraction of the light.[114] Indeed, in this context one could think of the polarization of light by means [58] of a mirror to be one part light cast back and another part light let through. What is essential about the process, however, is that with the refraction the light goes through such an intimate melding with the surrounding darkness that (unlike, e.g., half shadows) this no longer calls forth merely the intensive division of the activity of the retina, but rather its qualitative division.[115]

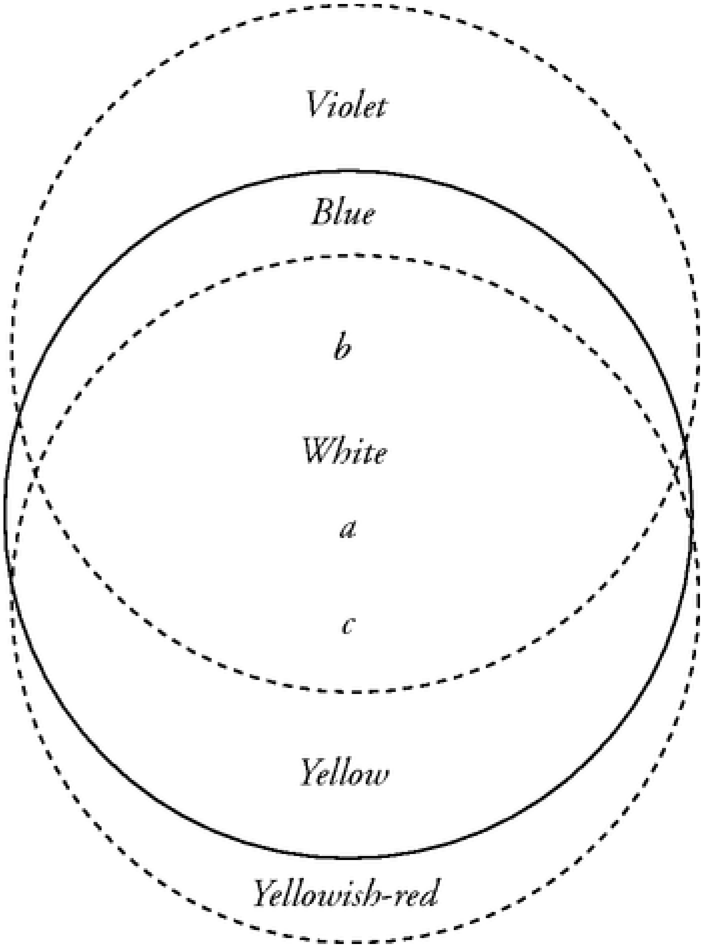

Figure 8

The accompanying figure (Fig. 8) shows more specifically how the four prismatic colours that are actually present [59] (not seven) arise from the effect of the two adjacent images cast by prismatic refraction,[a] in line with Goethe's fundamental law.

This figure represents a white paper disk of some 4 inches diameter glued to a matt black paper, as seen through a prism from a distance of some three paces, presented as in nature, and not according to the Newtonian fictions. Now anyone who wants to know what is being said, has to be convinced by autopsy.[b] Holding the prism before one's eyes, and first stepping closer and then farther away, one will perceive both secondary images almost simultaneously and immediately, and will see how, following one's movements, the secondary images distance themselves first more, then less, from the primary image, sliding over one another. If one steps back considerably farther, then blue and yellow overspread one another and one will enjoy the highly edifying spectacle of seeing how the Newtonian *homogeneous* green light, the pure primary green,[a] is composed out of this blue and yellow. – Prismatic experiments can in general be done in two ways: either so that the refraction precedes reflection, or so that the opposite occurs; the former happens when the image of the sun is cast on a wall through a prism; the latter occurs when a white image is observed through a prism. This latter method is not only less troublesome to conduct, but also shows the actual phenomenon more clearly. This is in part because here the effect of refraction reaches the eye immediately, with the advantage that one receives the effect firsthand (whereas, by the other method one first receives it secondhand, after the reflection occurs on the wall), and in part because in this case the light proceeds immediately from an object that is nearby, sharply delineated, and not blinding (whereas, by the first method what travels through the prism is directly the image of a body 20 million miles distant, correspondingly large, and radiating its own light). Therefore, the white disk depicted here (whose place is taken by the sun in the first method) quite clearly shows the two secondary images accompanying it, which have originated as a result of a double refraction displacing it upwards. The secondary image originating in the first refraction, taking place upon the [60] entry of a light in the prism, lags behind and so remains with its outermost edge still in darkness, hidden by the darkness; in contrast, the other, which arises upon the second refraction, that is, with the light's exit from the prism, rushes forth and so spreads over the darkness. The effect of both, however, extends, although more weakly, over *that* part of the primary image that is weakened by the loss of both; therefore, only *that* part of the primary image that remains obscured by the *two* secondary images, thus retaining its full light, appears white; in contrast, colours arise (as is certainly consistent with the Goethean law) where *one* secondary image *alone* struggles against the darkness, or where the primary image, which is somewhat weakened by the departure of this secondary image, is already impaired by the darkness. Accordingly, on the upper part, where *one* secondary image alone rushed forth, spreading itself over the black surface, we see violet arise; under this, however, where the primary image is already weakened by loss, we see blue produced; on the lowest part of the image, in contrast, where the single secondary image remains in the darkness, yellowish-red shows; atop this, however, where the primary image, already weakened, shines through, we see yellow, just as the rising sun when first covered by the lower, denser atmosphere appears yellowish-red, but when it reaches the more rarified atmosphere only appears yellow. As a result of this explanation, just because the white disk alone is not what produces colours, but works with the darkness as the second factor, the colour phenomenon appears much better if the white disk is attached to a black background than to a light gray one.

After this explanation of the prismatic phenomenon, it will not be difficult for us, at least in general, to understand why with equal refraction of light some refracting media, such as flint glass, produce the phenomenon of a broader coloured band, while others, such as crown glass, produce the phenomenon of a narrower coloured band; or, in the language of the Newtonians, to understand what the possibility of non-uniformity of refraction of light and dispersion of colours depends on. For *refraction* is the distance of a primary image from its line of incidence; *dispersion*, in contrast, is the [61] distance, arising at the same time, of the two secondary images from the primary image; but now we find this *accidental property*[a] present in various refracting substances to various degrees. Hence, two transparent bodies can have equal powers of refraction, i.e., they deflect the images of light passing through them an equal distance from its line of incidence; yet at the same time the *secondary images*, which alone cause the colour phenomenon, can distance themselves from the primary image upon refraction through one body more than upon refraction through another.

Now in order to compare this account of the subject with the so-often-repeated Newtonian explanation of the phenomenon analysed above, I choose the expression of the latter given in the following words on 27 October 1836, in the *Munich Scholarly Review*, following the *Philosophical Transactions*:[b] 'various transparent substances refract the various homogeneous lights in very unequal proportions,[*] so that the spectrum, produced through different refracting media, in otherwise equal circumstances, achieves a very different extension.' – If the lengthening of the spectrum generally originates from the unequal refractibility of the homogeneous lights themselves, then everywhere this lengthening must occur according to the degree of refraction and, hence, greater lengthening of an image could only arise as a result of the greater refractory power of a medium. Now if this is not the case, but one of two media of equal refractory strength produces a longer spectrum and the other produces a shorter one, then this proves that the lengthening of the spectrum is not the direct effect of the *refraction*, but merely the effect of an *accidental property*[a] accompanying the refraction. Now the secondary images arising from this are such an *accidental property*: upon equal refraction, given the nature of the refracting substance, these secondary images can readily be more or less distant from the primary image.[116]

[62] § 11 The three types of the division of the activity of the retina in combination[117]

For the sake of completeness, I have still to note that a combination of the *qualitative* with the *intensive* division of the activity of the retina is like the deviation of a colour from its greatest energy, either into paleness or into darkness; likewise, the *extensive* part also combines with the qualitative, one part of the retina producing one colour and another part of the retina another colour upon external stimulus; thereafter, as is well known, upon the cessation of the stimulation, the two requisite colours on each part of the retina make up spectra. In normal use of the eye all three types of division of the activity of the eye mostly take place simultaneously and in combination.[118]

If some difficulty is to be found in the fact that, according to my theory, when we view a very colourful surface, the activity of the retina would be simultaneously divided into a hundred places in very different proportions, then it might be considered that when hearing the harmony of an immense orchestra, or the quick arpeggios of a virtuoso, the tympanic membrane and the auditory nerve are set into vibrations of diverse numerical ratios now simultaneously, now in quickest succession, all of which the intelligence[b] apprehends, evaluates arithmetically, sensing their aesthetic effect, and immediately noticing every deviation from the mathematical correctness of a tone: it will then be found that I have not believed the much more perfect sense of sight capable of too much.

Now a special, so to say, abnormal phenomenon is still worth mentioning here, one which absolutely cannot be reconciled with the Scherfferian explanation and so contributes to its refutation, but which still needs special elucidation according to my explanation. If there are some smaller, colourless spots on a large, coloured surface, then once the physiological spectrum produced by the coloured surface appears, these spots no longer remain colourless, but present themselves as the colour that was formerly present on the whole surface, even though they have not at all been affected by the complement of that colour. [63] E.g. after seeing the green wall of a house with small gray windows, the spectrum of a red wall follows – not with gray, but with green windows. According to my theory, we can explain this by the fact that after a certain qualitative half of the activity of the whole retina was produced by the coloured surface, a few small spots remain excluded from the stimulation and now when the external stimulus ceases, the complement of the half of the activity it excited now appears as a spectrum, while the spots that were excluded from the stimulation enter into the qualitative half of the activity formerly present in a consonant way[a] and mimic,[b] as it were, what all the rest of the retina previously experienced while they alone were excluded by the absence of stimulus; hence, it is as if, so to speak, they are exercised afterwards.

§ 12 On some injuries and an abnormal condition of the eye[119]

This may also be the place to note that those spectra produced by mechanical concussion[c] of the eye and those produced by blinding light[d] are to be regarded as the same kind, and are different only in degree. They can be rightly called pathological spectra, for[120] just as the former occur by obvious injury, so the latter phenomena are temporary disruptions of the activity of the retina produced by overstimulation, where the activity is, as it were, thrown out of equilibrium, divided convulsively first this way then another, thus exhibiting the phenomena that Goethe described (Vol. 1, p. 15).[e] An eye dazzled by blinding light sees a red spectrum when looking into brightness, a green spectrum when looking into dim light, precisely because its activity is divided by the force of overstimulation, so first one and then the other half appears, in proportion to the external conditions.

The opposite injury of the eye[121] to that of blinding is eyestrain on account of dim light.[a] With [64] blinding, the external stimulus is too strong; with eyestrain in dim light it is too weak. Through want of external stimulus by light the activity of the retina is intensively divided, and only a small part of the retina is actually aroused.[b] Now through voluntary strain, e.g., through reading, this arousal is increased, thus an intensive part of the activity is aroused without stimulus, but wholly by straining internally. To make clear the perniciousness of this, none other than an obscene comparison occurs to me.[122] Specifically, this causes harm in the same way as onanism,[c] and generally any arousal of the genitalia arising through mere fantasy, without the influence of natural external stimulus, is more enervating than the actual natural satisfaction of the sex drive.[d]

My theory first makes understandable why the artificial light of a flame fatigues the eye more than daylight. The light of a flame illuminates everything reddish-yellow (which also explains the blue shadows). Consequently, as long as we are seeing by light, only some $^{2}/_{3}$ of the activity of the retina is excited and does all the straining for vision while approximately $^{1}/_{3}$ rests. This must enervate in a similar way as does the use of a polished lens in front of *one* eye; indeed, all the more, as in this case the division of the activity of the retina is not merely intensive, but qualitative, and the retina is held in that state for a long time without interruption; therefore, it also has the impulse[e] to produce the complement, which it satisfies on the occasion of any otherwise weakly illuminated shadow by immediately colouring it.[123] Thus it was a good suggestion to make night lights similar to daylight through blue lenses tending slightly to violet; for which reason, through personal experience, I recommend that glasses be neither too dark nor too thick, for otherwise the appearance of dim light arises.[124] For more, see *Parrot*, *Treatise on the Manner of Changing Artificial Light into a Light Resembling Daylight*,[f] Strasbourg, 1791.

An additional proof of the subjective nature of colour, or that it is a function of the eye itself and [65] consequently pertains immediately to the eye and only secondarily and mediately to objects, is ultimately given to us by the *Daguerrotype*, which in its purely objective way reproduces everything visible about the body except the colour. Another, still more striking proof[125] is provided for us by the occurrence, certainly uncommon, but still now and again to be found, of those people who see absolutely no colours and whose retina lacks the capacity to divide its activity qualitatively. Hence they see only gradations of light and dark;[a] consequently, the world presents itself to them like an ink drawing,[b] an engraving, or a Daguerrotype: it is deprived of the particular stimulus that the addition of colour confers on it for us. We find an example of this in the 67th volume of the *Philosophical Transactions* of the year 1777, where (p. 260) a detailed report is given on the three *Harris* brothers, none of whom could see colours, and in the following volume is an essay by *J. Scott*, who saw no colours, a defect many members of his family also had. A physician living in Hamburg, well known in his time, *Unzer*, suffered the same privation; however, he made efforts to hide it as far as possible, for because of it he was obviously at a disadvantage in diagnosis and symptomatology. In order to get to the bottom of the matter, his wife once used blue make-up on her face, upon which he merely remarked that today she had put on too much rouge. I am grateful for this account to a painter, *Demiani*, who forty years ago was gallery-supervisor in Dresden, and to whom the matter became known because he had painted a portrait of this woman, whereupon *Unzer* explained that he could not make judgements about the colouring and told him why.[126] Yet another example of this sort is provided by a Mr *von Zimmerman* who lived in Riga at the beginning of this century. The publisher of this work,[*] who knew him personally, vouches for the following report about him, and also refers to Albanus, the director of the secondary school, who was this gentleman's teacher. So for this Mr *von Zimmerman* absolutely no colours existed: he only saw everything in white, black, and nuances of gray. He played billiards quite well, and since [66] in Riga billiards is played with yellow and red coloured balls, he was able to distinguish between these very well because the red appeared to him as much darker. (According to my theory, with pure colours, red must for him be half again darker than yellow.) An experiment had been conducted with him, which, with respect to my theory, could not have been more fortunately devised. He wore a red uniform; instead, a green one was put out before him; he noticed absolutely nothing, put it on, and was about to go to parade in it. For of course for him pure red and pure green must be as identical as ½ = ½. That is, his retina completely lacked the capacity to divide its activity qualitatively. – Much more common are people who see colours quite imperfectly since they recognize a few, but not most. In my own experience, there have been three such people: they were least able to distinguish red from green for the reason given above. That such an achromatic deficiency can also occur temporarily is to be seen from an essay by Theodor Clemens, 'Colour-blindness during Pregnancy, including Some Discussion about Colour-blindness in General' to be found in *Archive for Physiological Therapy*,[a] 1858. (On colour-blindness, see also G. Wilson, *Researches on Colour-blindness*, Edinburgh, 1855.)[127]

§ 13 On external stimuli that excite the qualitative division of the activity of the retina[128]

Up to this point we have considered colours in the narrowest significance,[b] specifically as conditions, affections of the eye. This consideration is the first and most essential part of colour theory, colour theory in the narrowest sense,[c] which as such must be the basis of all further investigations on colour and with which they must always remain consistent. To this first part[129] there must be added as a second the consideration of causes that externally affect the eye as stimuli, but do not, like pure light and white, affect the [67] undivided activity of the retina in greater or lesser degrees, but always evoke only a qualitative half of such activity. Goethe divided these external causes quite correctly and appositely into two classes, namely chemical and physical colours, i.e., those permanent colours inhering in bodies, and the merely temporary colours that arise through some particular combination of light and transparent media.[130] Now if their difference is to be indicated by a single generalization, then I would say: physical colours are those causes of the excitation of a qualitative half of the activity of the retina that as such are accessible to us; hence, we understand that, even if we are not in agreement about the manner of their effect, this effect must still be subject to certain laws that exist under the most varied circumstances and among the most varied materials, so that the phenomenon[d] can always be traced back to them. Chemical colours, in contrast, are those for which this is not the case, and whose causes we recognize without at all comprehending the manner of their special effect on the eye.[131] For although we know[e] that, e.g., this or that chemical precipitate yields this certain colour and to this extent is its cause, we still do not know either the cause of the colour *as such* or the law as a result of which it occurs here; rather, its occurrence is only known *a posteriori* and to that extent remains for us contingent.[a] Conversely for physical colours, we know their cause *as such*, the law of their appearance; thus, too, our cognition[b] of these physical colours is not connected to a specific material, but applies to any material; so, e.g., yellow appears as soon as light is refracted through a turbid medium, be it a parchment, a fluid, smoke, or the prismatic secondary image.[132] – Even black and white exist physically as well as chemically: physical black is darkness; physical white is perfect turbidity. As a result of what has been said, *physical* colours can also be called *comprehensible*, while *chemical colours* are *incomprehensible*. The second part of a colour theory would be completed by a reduction of chemical to physical colours in some sense. Newton did [68] exactly the opposite of this, reducing physical to chemical colours, by teaching that in refraction the white ray is split into seven unequal refrangible parts, and that these parts just happened to have[c] a violet colour, an indigo colour, etc.[133]

I will say something later about chemical colour; first here to physical colours. Since ultimately light is always the external stimulus of the activity of the retina, it must be possible to demonstrate an exactly corresponding modification of light for any modification of that activity by which the sensation of colour exists.[134] What this is, is the point of controversy[d] between Newton and Goethe, a controversy to be decided in the final instance by facts and experiments submitted to correct judgement. But if we now take into consideration what was said in § 2 about the necessary parallelism between cause and effect, then we will not doubt that the more exact knowledge of the effect to be explained – the knowledge previously gained that colour is a physiological fact – puts us in position to settle something about the external causes we have been seeking independently of any experimental investigation (and thus, to this extent, *a priori*). This would be essentially the following.[135]

1) Colours themselves, their relations to one another, and the rule-governed nature[e] of their appearance – this all lies in the eye itself and is only a special modification of the activity of the retina. The external cause can only act as a stimulus, as an occasion for the expression of this activity,

and is thus very much subordinate: it can only play the kind of role in the production of colour in the eye, i.e., in the excitation of the polarity of the retina, that friction can in calling up electricity lying dormant in a body,[a] i.e., the separation of +*E* and –*E*. Yet colours can never exist anywhere external to the eye, purely objectively, in a definite number, having definite rules and relations to one another, and delivered to the eye ready-made. If despite all this, one wanted to effect an agreement between my theory and the Newtonian, this infelicitous thought could only be prosecuted by means of the assumption of the most miraculous pre-established [69] harmony[b] on which a human mind in speculative distress might ever seize. That is, as a result of this harmony, certain colours, although originating in the eye according to the laws of its functions, just like all the remaining innumerable colours, nevertheless have expressly prepared, as it were, pre-established causes in light itself, and indeed in its constituents.

2) Every colour is a qualitative half of the complete activity of the retina, to which it is restored by another colour, its complement. Consequently, there are certainly only pairs of colours and no single colours; thus, it cannot be assumed that there are seven – an odd number of colours – actually existing separately.

3) The colours form a continuous circle, within which there are no boundaries, no fixed points on the equator of Runge's colour sphere described in § 5 above. Every colour arises from the division of this circle into two halves, and the colour's complementary opposite is immediately given: the two together always potentially[c] contain the whole circle. The number of colours is thus infinite; hence, one can assume neither seven, nor any other determinate number of fixed colours. It is simply through the rational, readily comprehensible ratio, expressible in prime numbers, into which the activity of the retina divides itself that the three pairs of colours especially distinguish themselves, and for this reason these colours are always and everywhere designated by particular names, but beyond this there is no other reason, since otherwise they have no priority over the others.

4) The infinite number of possible colours that originates from the infinitely modifiable divisibility of the retina's activity must have corresponding to it an equally infinite modifiability, capable of the slightest transitions, in the external cause that acts as stimulus. However, this in no

way affords the assumption of seven or any other definite number of homogeneous lights as parts of white light, all of which exist by themselves as fixed and firm, but which, when united with one another, could never produce anything but a return to colourlessness. I know well that Newton sometimes asserts, when [70] the coherence of his fabrication requires, that the seven homogeneous lights were essentially just a joke,[a] that they were really not homogeneous, but extremely complex, composed of infinitely many lights that are really and truly homogeneous. Now even as expressed here, this could at most save the homogeneous lights from the claim of the present numbered paragraph; however, the same argument condemns them all the more certainly in the next paragraph, since, not to mention that they now only exist like Democritus' atoms, it then follows that each genuine homogeneous light, i.e., each actual primary colour, is related to white as an *infinitely small* fraction is to one; and so they absolutely vanish into darkness and become invisible.[136] – In contrast, Goethe's theory entirely satisfies the requirement made here. For a turbidity that can be found now on this side of light, now on the other, that can be now more opaque, now more transparent in countless degrees, and finally can be illuminated equally from both sides in the most varied ratios – that presents us with the same infinite ability to modify in the cause as we found in the effect.

5) We have found the *skieron* essential to colour (or its shadow-like nature) to be based in the eye on the fact that the merely half activity of the retina presupposes the repose of the other half, and that the expression of the latter is just this *skieron*; we have compared its intimate connection with light (appearing as colour) to a chemical mixture of light and darkness. This *skieron* must again be found external to the eye, represented in some way in the external cause. Now, indeed, Newton's theory that colour is always $^1/_7$ of whole light would be extremely inadequate in this point, since his theory recognizes colour as something less bright than white, but to the exaggerated extent that according to their brightness all colours (with insignificant differences) are related to white sometimes as 1 to 7, or at least as 1 to 6; but we know that even the weakest and dimmest of all colours, violet, is related to white as 1 to 4; blue, as 1 to 3; green and red, as 1 to 2; and yellow, even as 3 to 4. In the preceding numbered paragraph, I have already said how absolutely grim it is here for the Newtonian theory if [71] one accepts an infinite number of homogeneous lights instead of seven, as

its esoteric teaching truly has it.[137] – Conversely, the urphenomenon presented by Goethe also perfectly and most satisfactorily meets the requirement regarding the *skieron*. He has colours originate from light and darkness in the most intimate combination. A dimmed light excites yellow in the eye; an illuminated darkness, blue; however, neither can occur immediately, from which just dimness, gray, the intensive division of the activity of the retina, would result; rather by means of the interposition of a third, turbidity, which, so to speak, becomes the solvent[a] of the chemical penetration of light and darkness, which then evokes the polarity of the eye, i.e., the qualitative division of its activity.[138] – After appropriately describing all the phenomena of the *physiological* contrast of colours, Goethe asserts that yellow and blue are a *physical* contrast arising from opposite causes: yellow from a turbidity's obstructing light to the eye, blue from the eye's looking into the darkness through an illuminated turbidity. This physical contrast is completely correct as long as it is understood as a general expression for two primary relations of all physical colours, and blue and yellow here are seen as representative, so to speak, of two classes, cold and warm colours. If, however, it is to be understood in the narrowest sense and just assumed to be a prevailing physical contrast between yellow and blue, then the incongruence of the opposition of the physiological colours with that of the physical must be astonishing, since the actual opposite of blue is orange, and the opposite of yellow is violet, and it is to be presupposed that the relation that obtains between colours in the proper sense must again be found between their causes external to the eye, in accordance with the Aristotelian principle cited above, 'contrary causes for contrary effects' (*On Generation and Corruption,* ch. 10).[b] Certainly this is the case and any incongruence is merely apparent. For considered more precisely, one and the same degree of turbidity that excites pure blue when brought in front of darkness and illuminated, produces not yellow but orange [72] when conversely it obstructs light; and in just the same way, one and the same degree of turbidity will always produce two opposite colours, complements of one another, under opposite circumstances of light and darkness. That this must be so follows *a priori* from the following consideration. A colour necessarily appearing afterwards as a spectrum, is the complement of a given colour; hence, the latter must lack as much of the complete activity of the eye as the former has; i.e. the latter must contain just as much darkness (*skieron*) as the former contains light. Now for all physical colours on the positive side (i.e. everything ranging between yellow and red) turbidity is the cause of their darkness, since turbidity impedes light; conversely, for all colours on the negative side, turbidity is the cause of their brightness, as this turbidity reflects the incident light, which otherwise would be lost in darkness. Thus, if under the opposite conditions the self-same turbidity causes in one case just as much brightening as in the converse darkening, and if this indicates that any colour must contain as much brightness as its complement contains darkness, then the self-same turbidity, given opposite illumination, will necessarily produce the two colours that require and complement one another.[139] In this we now have a complete *a priori* proof of the truth of the Goethean urphenomenon and the correctness of his whole theory of colours, which I ask the reader to consider. Proceeding merely from knowledge of colour in the strictest sense, thus as a phenomenon in the eye, we have found that its external cause must be diminished light; however, a light diminished in such a way that it must have the property of imparting just as much light to any colour as its complement imparts to darkness, *skieron*. This, however, can occur in an infallible manner that fits all cases, only if the cause of brightness in a given colour is exactly the cause of the shade, or dimness, in its complement. For there are ‘contrary causes for contrary effects’.[a] Only a turbid partition inserted between light and darkness satisfies this requirement, but does so completely, because under opposite illumination it always causes two physiologically complementary colours that, depending on the degree of thickness and density of the turbidity, [73] turn out differently, but together always complement one another to produce white, i.e., the complete activity of the retina. Given the thinnest turbidity, these colours will be yellow and violet; with increasing density they will always transform into orange and blue, and finally, with still greater density they become red and green, the last of which, however, is not likely to be produced in this simple way, although the sky at sunset and sunrise now and then causes it to appear faintly. If finally the turbidity is complete, i.e., increased to the point of opaqueness,[b] when light strikes it, then white appears; with light behind it, darkness or black. – Since the Goethean urphenomenon can be derived from my theory, it no longer deserves to be called such. For it is not, as Goethe took it, a simple given, one not susceptible of further explanation; rather, it is only a cause, since, following my theory, such a cause is required for the production of the effect, that is, the halving[c] of the activity of the retina. The true urphenomenon is only the retina's organic capacity to divide the activity of its nerves into two qualitatively opposed halves, now equal, now unequal, and have them come to the fore successively. At this we must obviously stop, since from here on there can only be final causes[a] of the kind we generally encounter throughout physiology; such as the fact that through colour we have one more means for distinguishing and recognizing things.

From the derivation of the Goethean urphenomenon given above, it also follows that the physical contrast must always coincide with and correspond to the physiological contrast. The prismatic spectrum completely corroborates what has been said above about the four colours[b] that it shows originally and in their simplest condition – as is easily understood from the figure given above.[c,140] A turbidity of doubled denseness creates a doubled secondary image on the side of the blue and on the other a reddish-yellow band, that is, two complements for the full activity of the retina; and turbidity of half denseness produces, in the corresponding places, a violet and a yellow edge, which also complement one another. Thus physical and physiological [74] opposites fully coincide.[141] Similarly certain turbid solutions of Quassia, *lignum nephriticum*,[d] and the like, produce the same yellow, the complementary colour of blue, from transmitted light as they produce when light strikes them. Even tobacco smoke, blown into the light, appears dirty orange; and blown toward the shadow side, blue.[142] – As a result of all this, the physical contrast of yellow and blue, as put forth by Goethe, applies only in general, insofar as yellow and blue here indicate not two colours, but two classes of colours. It is necessary to note this restriction. But now when Goethe goes still farther, calling this physical contrast of yellow and blue a polar contrast, I would be able to agree with him only by resorting to a highly artificial explanation, but I must differ from him. For, as my whole presentation shows, polar contrasts have to do only with colours in the strictest sense,[e] as affections of the retina, the polarization of which, i.e., the separation into qualitatively opposed activities, they just make obvious. To assert a polarity of light means the same as to assert the division of light. Since Goethe rejects the latter, but then still speaks of a polarity of colours, independent of the eye, but explains colour itself from the conflict of light with turbidity or dimness, and does not derive it from anything farther, then this polarity of colour could be nothing other than a polarity of this conflict.[143] The inadmissibility of this requires no refutation. Every polarity must originate from a unity split into two; it is separated into two qualitative opposites; however, a polarity can never originate from chance encounter of two things of different origins, such as are light and a turbid medium. –

Now finally concerning chemical colour: it is obviously a unique modification of the surface of a body, which, however, is so subtle that we are also absolutely unable to recognize and distinguish it, but it makes itself known solely through its capacity to evoke one or another determinate half of the the eye's activity. This capacity is for us still an occult quality.[a] But it is easy to understand that such a slight and subtle modification of the surface [75] can be greatly altered, even through trivial circumstances, and thus cannot stand in any commensurate[b] relation to the intrinsic, essential properties of a body. This ready alterability of chemical colours goes so far that occasionally a complete change of colour corresponds to an extremely slight, or even totally undetectable alteration in the properties inherent in the body.[144] So, e.g., the cinnabar obtained through the fusion of mercury and sulphur is black – just like a similar combination of lead with sulphur: only after it has been sublimated[c] does cinnabar assume the well-known fiery red, although a chemical alteration in it is not demonstrable here. Through mere heating, red mercuric oxide becomes blackish-brownish, and yellow, basic nitrate of mercury becomes red. A well-known Chinese rouge comes to us borne on a little piece of cardboard and is then dark green: when touched with moistened fingers, this is immediately coloured bright red. Even the example of crabs becoming red when cooked belongs here; as does the rapid change of the green of many leaves into red at the first frost, and the reddening of an apple on the side on which the sun shines, which may be ascribed to a more powerful deoxidation of that side; similarly, that some plants have a bright red stem and all the veins of their leaves, but the parenchyma is green; generally the multicoloured quality of many flower petals, as well as the variety of a single type, of tulips, carnations, mallows, dahlias, etc. In other cases, we could demonstrate that the chemical difference revealed by colour is very small; e.g. when tincture of litmus or violet extract change their colours through the slightest trace of oxidation or alkalinization. On the one hand, all this confirms what follows from my theory: the predominantly subjective nature of colour that has always been felt, as in the old saying ‘there is no disputing taste and colours’[d] or as the proven saying similarly attests, ‘do not put too much faith in colours’,[e] and which has made colour almost become a symbol of deceptiveness and inconsistency, so that it has always been found dangerous to consider only colour. For this reason we must [76] be careful not to attribute too much significance to colours in nature. On the other hand, the examples cited above teach that the *eye is the most sensitive reagent*[a] in the chemical sense, as it allows us to recognize instantaneously not only the least detectable alterations, but even such alterations of composition as no other reagent can show. The possibility of *chemical* colours generally depends on this incomparable sensitivity of the eye. Chemical colours in themselves are still completely unexplained, while we have finally obtained the correct insight into *physical* colours through Goethe, despite this insight's having been impeded by the promotion of false Newtonian theory. Physical colours are related to chemical colours exactly as magnetism produced by a galvanic apparatus (and to this extent understandable from its immediate cause) is related to permanent magnetism in steel and in iron ores. The former provides a temporary magnetism that exists only through a complex of conditions, and as soon as these no longer obtain, its existence ceases; the latter, in contrast, is incorporated in a body, inalterable, and, until now, unexplained. It is enthralled like an enchanted prince: the same applies to the chemical colour of a body.[145] Therefore tourmalines provide for us another comparison in relation to bodies in which transient electricity can be produced just by friction; for as physical colours appear only through a combination of conditions and chemical colours, in contrast, merely require illumination in order to appear, so tourmalines merely require heat in order to reveal the electricity dwelling in them at all times.[146]

A general explanation of chemical colours appears to me to be found in the following. Light and heat are metamorphoses of one another. The sun's rays are cold, as long as they illuminate: only when they cease to illuminate on striking an opaque body, do they transform their light into heat; therefore, passing through a thin sheet of ice into the blackened interior of a box, the sun's rays[*] considerably increase the temperature on a thermometer [77] in the box without melting the sheet of ice;[147] indeed, even a lens ground from ice lights a fire without itself melting in the process – which could not occur if the sun emitted original and inalterable rays of heat, different from light rays and mixed in with them, which as such passed through the ice, and so must have an effect as such and melt it. (A bell jar, placed over a plant, produces a high degree of warmth because the light instantaneously passes through the glass and changes into heat due to the opaque soil, but the glass is not so readily permeable for heat as for light; therefore, heat collects under the bell, reaching a high degree.)[148] Conversely, heat transforms into light with glowing stones, glass, metals (also in irrespirable types of gas) and with even the slight heating of fluorite. The specially modified way in which a body, depending on its nature,[a] transforms light that strikes it into heat is, to our eye, its chemical colour. This chemical colour will turn out to be all the dimmer, the more readily and completely this process of transformation proceeds; thus, black bodies most readily become warm: that is all we know of it. Yet from this we can understand how the different colours of the prismatic spectrum heat bodies differently, and also see how a single physical colour can produce a chemical colour, as, e.g., silver chloride is blackened by clear, that is, white sunlight,[b] but even takes on the colours of the prismatic spectrum if it remains exposed to such light for a long time. For here the chemical colour which arises for our eyes is the expression of a modified and thereby weakened manner in which silver chloride receives light and transforms it into warmth, while the free, unencumbered course of this process, in white light, reveals itself by the black coloration.[149] – Just as heat and light are metamorphoses of one another, so *electricity* is another metamorphosis of heat, as Seebeck's thermoelectricity proves: when bismuth and antimony are soldered to one another, the heat imparted to them immediately changes into *electricity*. [78] Electricity is changed into light by an electric spark and when a current flows in a vacuum, and electricity is changed into heat when its current is impeded in an electrode, which then glows; and when its current is impeded in an iron electrode, it then burns.[150]

As I have already said, it is obvious that the fractions I have discovered are correct for the six primary colours into which the activity of the retina is qualitatively divided, but this remains a matter of immediate judgement and must be accepted as self-evident, for it is difficult – perhaps impossible – to prove.[151] Still, I will indicate here two ways in which a proof might nonetheless be found. There have been frequent efforts to seek a precise determination of the ratios into which the three primary chemical colours must be mixed as pairs in order to produce the colour lying exactly in the middle between them. By name, Lichtenberg,[*] Erxleben,[**] and Lambert[***] have busied themselves in answering this question. But a statement of the real significance of the problem as well as a scientific, and not simply an empirical solution to the problem, is first provided by my theory. I must, however, preface this with the remark that the pigments that are applied in these experiments must be of absolutely perfect colour, i.e., such as 1) divide the complete activity of the eye without leaving an undivided remainder – colours which thus are free of all paleness or dimness foreign to their nature and which are extremely glaring, energetic colours; 2) such colours as are exactly $^{1}/_{3}$, ½ and ¾ of the activity of the eye, that is, perfect blue, red, and yellow, i.e., the three chemical primary colours in their greatest purity. Now if in working with such colours one wanted, e.g., to compound green (which is ½ of the full activity) out of blue (which is $^{1}/_{3}$) and yellow (which is ¾) then the amount of blue must be in inverse proportion to the amount of yellow, just as the difference [79] between $^{1}/_{3}$ and ½ is inverse to the difference between ¾ and ½: for when a given colour is that much nearer than the other to the one that is to be compounded, one must use just that much more of it; and when the other given colour is that much further away, one must use just that much less of it. Thus three parts blue and two parts yellow yield perfect green. They must be mixed as dry powders so that the pigments do not chemically affect one another, and according to mass, not according to weight. The rule put forth through this example applies to any mixture of this sort. Now the exact correspondence of the result with the numerical ratios I have propounded for the various halves into which the retina's activity divides in the three primary pairs of colours would serve as proof of their correctness. Admittedly, the judgement of the correctness of the result as well as of the perfection of colour obtained through the mixture always remains up to sensation. But sensation can never be ignored when colours are discussed.[152] – Another way to conduct a proof for the fractions in question would be the following. Obtain some perfectly black and perfectly white sand and mix these in six ratios, each of which precisely matches the dimness of one of the six primary colours. The result must be that the ratio of black to white sand expresses for each colour the same ratio as the fraction I have adduced, thus, e.g., gray that matches yellow in dimness would take three parts white and one part black sand; in contrast, a gray matching violet would require a mixture of sand in exactly the converse ratio; green and red, on the other hand, would require the same amount of both. Here, however, the difficulty arises of determining which gray matches each colour in dimness. This can be decided by observing the colour right next to the gray through a prism in order to see which of the two relates by refraction as brightness to dimness: if they are alike in this, then the refraction must not yield any colour phenomenon.[153]

[80] § 14 Some Additions to Goethe's Theory of the Origin of Physical Colours[154]

First of all, I will cite here a few favourable facts that serve to confirm Goethe's fundamental principle of physical colours, but which he did not mention.

If electricity from a conductor is allowed to flow through a glass vacuum tube in a dark room, then this electric light appears as a very beautiful *violet*. Here, as with blue flames, the light itself is just like a turbid medium, for there is no essential difference between an illuminated turbidity seen through the darkness, casting its own light on the eye, and one reflecting light into the eye. But because this electric light is extremely attenuated and weak, it causes violet, precisely according to Goethe's theory, instead of blue, as is caused by even the weakest flame, such as that of sulphur and alcohol, etc.

An everyday, common proof of Goethe's theory (one which, however, he overlooked) is that many glass bottles filled with red wine or dark beer stored in a cellar for a long time undergo a noticeable turbidity because of a deposit on the inside; as a result they then appear blue when light shines on them and also when something black is held behind them after they are emptied; in contrast, when light shines through them, they show the colour of the liquid or, when empty, of the glass.[155]

But even the colour of blue eyes is not a chemical, but merely a physical colour, arising consistently with Goethe's law. For according to *Magendie*'s report on the anatomy of the eye (*Elementary Summary of Physiology*, 2nd edn, Vol. 1, pp. 60–1[a]), the back wall of the iris is covered with a black material that shines right through brown or black eyes. But in blue eyes, the tissue of iris is whitish – thus turbid – and the [81] underlying black, shining through, produces the blue of the eye. (*Dans les yeux bleus le tissu de l'iris est à peu près blanc; c'est la couche noire postérieure, qui paraît à peu près seule, et détermine la couleur des yeux.*) This is confirmed by *Helmholtz* in *On Human Vision*, p. 8.[b] – It is just the same with the blue of the veins, which in any case is only physical: it arises because the blackish blood of the veins glistens through the walls of the vessels.

But the recently discovered planet Neptune provides us a proof of Goethe's law on a colossal scale. For the astronomical observations undertaken by Father *Secchi* at the observatory of the *Collegium Romanum* and communicated in the *Proceedings of the Academy of Sciences* of 22 September 1856,[c] contain the expressed assertion that this great planet is *nebulous*[d] (*nébuleux*) and its colour is *sea blue* (*couleur de mer bleuâtre*). Naturally! for we have here a turbidity illuminated by the sun with a dark background.[156]

The coloured rings which show when two polished plates of glass or even two convex lenses are firmly pressed together with the fingers I explain in the following way. Glass has considerable elasticity. Therefore, with any strong compression the surface gives a bit and is pressed in, temporarily losing its perfect smoothness and evenness, so that a gradual increase in turbidity occurs, related to that which is exhibited by frosted[e] glass. Thus here too there is a turbid medium, and the various gradations of its turbidity cause the coloured rings, partly because of incident light, partly because of transmitted light. If one releases the glass, the elasticity immediately returns the glass to its original condition, and rings disappear. Some spirits, wiped over a polished glass, yield exactly the same colours, not only in curves, but in lines. It is the same way with soap bubbles, which caused Newton to consider coloured rings in the first place. Soapy water is a turbid medium: now flowing down over the soap bubbles, [83] now spreading itself sideways, and even upwards, it offers the light varying degrees of turbidity that in this case also cause the coloured rings in all their variations.[*],[157]

With almost any newly discovered truth, it is afterwards found that a trace of it had already existed, that something very like it had been said, indeed, that it had already been exactly expressed, but without attracting attention, mostly because the author had not recognized its value and had not grasped the richness of its consequences, which prevented the author from developing it. In such cases people had, if not the plant, then at least the seeds.

So too we find half of Goethe's fundamental law of physical colours, or his urphenomenon, already expressed by Aristotle in his *Meteorology* III, 4: ‘Through darkness or in darkness (it makes no difference), an illumination appears reddish. One can see that the flames of a fire in green wood appear red because the actual bright and white fire is mixed with a lot of smoke; through mist and smoke, even the sun appears reddish.’[a] *Stobaeus* repeats the same in nearly the same words and as an Aristotelian theory (*Eclogae physicae et ethicae* I, 31[b]). And Leonardo da Vinci had already presented the other half [83] of Goethe's fundamental law in his *Treatise on Painting*, CLI[c] (see Brücke, *On Colours that Turbid Media Show in Incidental and Transmitted Light*, 1852, p. 10[d]).[158] I cannot help but remark that my colour theory is a fortunate exception to the almost universal fate which has evoked this curse: ‘to hell with those who have spoken our ideas before us’,[a] since prior to 1816 it had never occurred to anyone anywhere to consider colours, such an objective phenomenon, as the halved activity of the retina and in this sense to assign to each individual colour its *determinate numerical fraction*, which, with that of another colour, achieves a union that presents white, the complete activity of the retina. And still these fractions are so decidedly obvious that, in his *Manual of Opthalmology* of 1830, Vol. 1, § 535, and also p. 308, *Prof. Rosas* – since he would like to appropriate them – introduces them as self-evident. Thus, with *Giordano Bruno*, I may well say:

> And what the avaricious times have long obscured,
> I bring up, if it be permitted, from the darkness below.[b]

Of course since 1816 many have sought to smuggle it in as their own wares, either not mentioning me at all or only so casually that no one thinks anything bad of it. –

My theory compels me to differ from Goethe in just two points, specifically with regard to the true polarity of colours, as has been discussed above, and with respect to the production of white from colours, for which latter, Goethe never forgave me; however, neither in conversation nor correspondence has he ever advanced an argument against it.[159]

However, these two differences from Goethe will appear all the more unprejudiced and stemming from purely objective grounds to the extent that I am thoroughly convinced of the value of Goethe's work and deem it to be fully worthy of having one of the greatest minds of all times as its creator. But even if it stems from such a person, can a newly created theory, barring a miracle, already be so perfect at its inception that nothing remains to be added, nothing to [84] be corrected by a successor? So if perhaps Goethe's work contains the inaccuracies proven by me, contains even others, then this is inconsiderable compared to the truth of the whole, and is completely obliterated as a defect by the great service of exposing that strange mixture of self-deception and intentional deceit that has already been esteemed and believed for two centuries, and at the same time of having provided a largely correct presentation of that part of nature considered here:

Μηδὲν ἁμαρτεῖν ἐστι θεῶν, καὶ πάντα κατορθοῦν·
Ἐν βιοτῇ μοῖραν δ’ οὔτι φυγεῖν ἔπορον.[*]

We are obliged to recognize what has been accomplished, to be thankful and to accept it with good sense, and then to the best of our ability to perfect it as much as we are able.

Now certainly until the present the opposite has occurred. Goethe's colour theory has received not only a cold, but a decidedly unfavourable reception; indeed, right from the beginning it fell flat (believe it, posterity![a]), since it experienced unanimous, damning public judgement on all sides, and without real opposition,[b] from experts in the field, on whose authority the rest of the educated public, already predisposed to complacency and indifference, is very glad to dispense with its own examination of it; thus even now, forty-four years later,[160] things remain the same. This work of Goethe's shares with many works of earlier times that have been granted higher status for their topic, but not for its treatment, the honour of having been put aside almost untouched for many years after its appearance; and even to this very day Newton's theory resounds uninterrupted from the seat of authority[c] and as always is intoned in compendia.

In order to understand the fate of Goethean colour theory, one must not overlook how great and [85] corrupting is the influence exercised over the sciences, indeed over all intellectual accomplishments, by *will*, i.e., biases,[d] and even to speak more authentically, wicked, vile biases. Since Germany is the fatherland of Goethe's scientific accomplishment, its fate here is most unpardonable. In 1840 the painter and gallery-supervisor *Eastlake* provided the English a translation of Goethe's colour theory[e] so excellent that it perfectly reflects the original and is easier to read, indeed, easier to understand than the original. One has to see how *Brewster*, who reviewed it in the *Edinburgh Review*,[f] behaved, that is, roughly like a tigress into whose lair someone forces his way to steal her young. Is this the tone of better conviction, calm and assured in the face of the error of a great man? Rather, it is the tone of the bad conscience of an intellectual who scents with horror the other side's being right and is now resolved to defend, tooth and nail,[a] as a national treasure, a pseudo-science he has thoughtlessly accepted without proof and through adherence to which he has already compromised himself. Now if Newtonian colour theory is accepted as a national treasure among the English, then a good French translation of Goethe's work would be most desirable, since then there would be hope for justice from the outset from the French learned world, as one neutral so far. However, we also see that they are deeply compromised in this matter by their theory of vibrations of the ether, of thermocrose, of interference, etc., entirely based on the theory of homogeneous light; for this reason, amusing experiments, too, issue from their allegiance to Newtonian colour theory. So, e.g., in the *Journal des savans*, April 1836,[b] *Biot* relates with heart-felt approval how *Arago* has conducted quite clever experiments in order to ascertain whether the seven homogeneous lights might not have an unequal velocity of propagation, so that from the variable fixed stars, which are now nearer and now farther, perhaps red or violet light arrives first, and thus the star appears differently coloured in succession: but in the end, fortunately, he apparently admitted that this is not so. [86] *Sancta simplicitas!*[c] – Mr *Becquerel*, who quite nicely strikes up the old tune afresh for the academy, as if it were new, in ‘Treatise Presented to the Academy of Sciences’, 13 June 1842:[d] ‘if we refract a beam [!] of solar rays through a prism, then we distinguish *quite clearly* [here the conscience knocks] seven kinds of colour, which are: red, orange, yellow, green, blue [this mixture of ¾ black with ¼ blue is supposed to be found in light!] and violet.'[e] Since Mr *Becquerel* is not ashamed to recite this piece from the Newtonian *Credo* so unabashedly and fearlessly thirty-two years after the appearance of the Goethean colour theory, one might feel tempted to declare to him quite clearly,[a] 'either you are blind, or you are lying'. Except one would do him an injustice, for it is simply the case that Mr. Becquerel believes Newton more than his own two open eyes. Such is the effect of the Newton-Superstition. – The large, two-volume compendium of physics (*Élémens de physique*) by *Pouillet* deserves special mention here, since by order of the government, it is the basis of public instruction in France. There (Book VI, Pt. I, ch. 3[b]) we find the whole revealed Newtonian colour theory presented with certainty and audacity on 20 large pages as if it were a gospel, and with all the Newtonian magic tricks, along with their caution and cunning. Whoever is intimate with the true state of affairs and the connections of things will not read this chapter without great indignation, although interrupted now and then by laughter, for he will see how falsities and absurdities are imposed anew on the upcoming generation, along with complete silencing of refutation – a colossal ignorance of what is to be refuted![c] – the most disgraceful thing is the care with which minor details are quoted, calculated merely to deceive and with no other motive,[d] among which are even some of recent invention; for this betrays the persistent intention to deceive. E.g. in § 392, No. 3 (Paris edn, 1847) an experiment is described that is supposed [87] to demonstrate that white is produced by the unification of the seven alleged prismatic colours; now for this purpose a cardboard disk 1 foot in diameter is painted with *two black zones*, one around the periphery and the other around the centre opening; between the two zones are glued multiple strips of paper tinted with the seven prismatic colours, set radially; and now the disk is spun rapidly, whereby the colour zone is supposed to appear *white*. Not a syllable of account is given about the two *black zones*; it is even impossible to give one honestly, for they inappropriately reduce the zone of colour that alone is pertinent to the matter. So why are they there? – This is what *Goethe* would tell you right away, and I must say it in his absence: so that the contrast and the physiological after-effect of black would affect the 'base gray', which is all this mixture of colours produces, so that it could pass for white. Hence French youth at their studies are duped by such conjurer's tricks, to the greater glory of Newton.[e] For even before the considerable improvement by the two black zones, which is a recent discovery, Goethe had set this to verse in the following way:

To show Newtonian white to children,
Who bow before the earnest pedagogue,
A teacher appeared, with the hoax of the whirling wheel,
On which there was a circle of colours.
Now it turns. ‘Look at it closely with me!
What do you see, boy?’ ‘Now what do I see? *Gray*?’
‘You do not see correctly! Do you believe that I would allow that?
White, stupid kid, white! So said *Mollweide*.’[a]

This stubborn adherence to Newtonian colour theory, and with it to the completely *objective* existence[b] of colour, has taken its revenge on the physicists by the fact that they have been led to a mechanical, crass, Cartesian, even Democritean colour theory, according to which colour is supposed to be based on the difference of the oscillations of a certain ether that these physicists are intimately acquainted with and toss around audaciously, [88] but which is a wholly hypothetical, even mythological being, actually seized out of thin air.[*] For *if* this ether existed, *perhaps* it could have been the indirect cause of the premature arrival of a comet, as is assumed by calculation – something no one would want to accept as a proof of its existence. (Against *Enke*'s explanation of the acceleration of his comet due to the resistance of ether, *Bessel* declared from the very beginning, saying that a hundred causes could be given by which this acceleration could be explained just as well. See Proceedings of the Academy of Sciences, 6 December 1858, p. 893.[c])[161] However, they now confidently employ exact calculations of the imaginary length of imaginary oscillations of an imaginary ether, since if they just have numbers they are satisfied, and immediately the aforesaid lengths of oscillation are joyfully calculated in tiny millionths of millimetres – to which there is an entertaining addition when they assign the *fastest* oscillations to the dimmest and least effective of all colours, violet; in contrast, they assign the slowest oscillations to red, which affects our eyes so vividly and even sets animals in an uproar. But, as was already said, for them colours are merely names: they do not perceive them, but proceed from calculation: that is their element; in it they find comfort.[a,162]

Besides, one has not only to guard against the theory of these modern Newtonian chromatologists, but one would also do well to examine twice their facts and experiments. There are, e.g., the Frauenhofer lines, about whose existence so much has been made, and which are assumed to inhere in light itself or to be the interstices between the separate, very numerous, and actually homogeneous lights,[163] and thus to be constituted differently depending on whether it is the light of the sun, of Venus, of Sirius, of lightning, or of a lamp. I have made repeated attempts with excellent instruments, carefully following *Pouillet*'s directions, without ever obtaining these lines, so that I had given it up [89] until by chance I came upon the German adaptation of *Pouillet* by *J. Müller*. This honest German expressed (2nd edn, Vol. 1, p. 416[b]) what *Pouillet* suppressed: namely, the lines do not appear unless a second slit is fixed immediately in front of the prism. This has confirmed my opinion, which I had always maintained, that the sole cause of these lines are the edges of the slit: I therefore wish that someone might not shy away from the difficulties of having an arched, or irregular, or finely-toothed slit prepared (out of brass and with ordinary screws); it is then most likely that the Frauenhofer lines would betray their true origin through their form, scandalizing the learned world – as a child, conceived in adultery, betrays its father through resemblance. Indeed, this is all the more likely as it is consistent with the conditions for the experiment mentioned by *Pouillet* (Vol. 2, § 365[c]): let light fall on a white surface through a small round hole; there is then supposed to be a number of concentric rings in the circle of light, though the rings likewise did not appear for me; on this, the honest *Müller* reveals to us that it requires a second hole (Vol. 1, § 218[d]), positioned before the first; indeed, he adds that when one applies a narrow slit, instead of a hole, then instead of concentric rings, parallel streaks appear. There, in fact, we have the Frauenhofer lines! I cannot help but wish that just once a good and unbiased mind, quite independent of Newtonian theory and mythological oscillations of the ether, would undertake all the highly complicated chromatic experiments, piled up high by the French opticians and Frauenhofer, including the so-called polarization of light and interference, and would seek to discover the true connection among all these phenomena. For insight has in no way kept up with the increase in facts; rather, it lags behind embarrassingly. And this is very natural, for anyone is able to increase practical experience, especially through the piling up and complication of conditions,[a] [90] but a rare few are able to interpret them. In general, even in our times, physicists have concerned themselves more with the *consequences* of natural forces than with their *grounds*, thus with the effects and applications of these forces, e.g., the use of the power of expansive vapours in steamships, machinery, and locomotives, or electromagnetic power for the telegraph, or of achromatism in telescopes, etc. In doing so, they achieve the respect of the people, but what concerns the *grounds* – who cares as long as it works; and so it is, e.g., with achromatism in telescopes, which is forced into the Newtonian mould, no matter how poorly it fits or whether it bends or breaks.

When the spectrum comes from *electric light*, the *Frauenhofer lines* should be glaring, instead of black (see Pouillet[b]). In a report about this, 'On Electric Illumination', by *Masson* in *Proceedings of the Sessions of the Academy of Sciences*,[c] 16 April 1855, following more precise investigation, it is stated that the cause of these brilliant rays[d] are metallic, glowing particles, torn free by the heat and thrown off by the electric current when the circuit is closed as the electrodes come into contact. If the electric spark is produced under water, they do not occur.

The *French* have nothing but nonsensical theories about the *polarization of light*, taken from undulation and the theory of homogeneous lights, including calculations that are based on nothing. Instead, they are always eager just to measure and calculate, taking it as the main thing: *le calcul! le calcul!* is their battle-cry. But I say, when calculation begins, understanding of the phenomena ceases.[e] When one has mere numbers and symbols in mind, one cannot trace causal connection. The how much and how large is important for *practical* purposes, but in theory it is primarily and ultimately the *what*. Having achieved this, one can get far enough with an approximation with respect to how much and how large.

Again, *Goethe* was too old when these phenomena were discovered – he was beginning to babble.[a]

In general I explain the matter this way. The [91] reflection of light at an angle of 35° actually splits the light into two different constituents, of which the reflected constituent displays special properties, which can all, however, be traced back to the fact that this light, now robbed of an integral component, appears weak and feeble. But just because of this it is also inclined to display physical colours, for any physical colour always arises from a particular damping[b] or weakening of light. The light displays this specific weakening first of all in its providing only one of the two images of Iceland spar; thus, the other image originated by means of the constituent of light that now has been eliminated. Then the light cannot completely fill the rapidly cooling glass cube; however, the light does not uniformly diffuse throughout this cube, but concentrates, whereby it illuminates some spots and leaves others empty. The empty spots then appear black and in certain situations form a cross; but depending how the cube is turned, the empty spots actually present two flexible black bands that move across it in all directions, first in wave forms, then again forming a black band, and only when the side of the cube is turned horizontally toward the eye do the bands come together in the middle like an X so they present a cross; however, to see all this clearly, the most suitable glass body is a *parallelepiped*, and not an actual cube. In any case, the four yellow spots in the angles of the cross can also be dispersed as stripes on the edge by rotation. On the whole they testify to the great tendency of this light, robbed of an integral constituent, to produce physical colours, among which, as is known, yellow appears most readily. This tendency is manifest in all sorts of phenomena. Sheets of mica or gypsum spar placed on the cube or on one another display all sorts of colours. To produce Newtonian rings with plate glass or lenses usually requires a certain pressure, but they arise quite readily in polarized light: two polished crystal plates especially produce them without any pressure other than their own weight, with the greatest beauty and marvellous regularity.

A piece of double spar clamped between two plates of tourmaline, of course, [92] produces the greatest marvel of polarized light because it makes visible, depending on the circumstances, a black or white cross surrounded by a halo of Newtonian rings. It appears certain that double spar also polarizes light (like reflection at a 35°angle). This marvel must be derivable from the principles given above.[164]

The grave injustice which Goethe had to suffer in regard to his colour theory has very many causes, and enumerating all of them would be as inconsiderate as it would be cruel.[165] However, we can express something of the same in the words of Horace:

> They believe shameful what they learned while beardless,
> Recognizing it in old age as untenable[a]

However, as the history of all sciences attests, every significant discovery suffered the same fate so long as it was new, and it is something that surprises those few who have had the insight 'that excellence is seldom found, more rarely valued' and 'that the world is actually full of absurdity'.[b] Meanwhile, the day of justice for Goethe's colour theory cannot be held off, and then once again the saying of *Helvétius* will be affirmed: 'merit is like powder, the more it is compacted, the stronger the explosion' (*de l'espr. disc.* II, *ch.* 10),[c] and then the drama, so frequently repeated in the history of literature, will be performed anew and brought to its conclusion.[166]

But the descendant – the one descendant out of millions – who will be conscious of his power to produce something authentic, something new, something extraordinary in art or science, and who as a result in art will probably meet the opposition of some old style, but certainly in science that of some old delusion – someday, this descendant, before he turns his work over to his contemporaries, might make himself familiar with the history of Goethe's colour theory; from the *Optics*, which will then moulder in libraries merely as material for the history of literature, let him become familiar with Newton's ghost, a ghost who no longer haunts the mind of any thinker, and let him read [93] Goethe's colour theory itself, the main points of which, briefly and concisely, had already been impressed on him when he was at school; finally let him also read as much of the documents of the reception of Goethe's work as the worms will have left behind and as he can bear with equanimity; moreover, let him compare the palpable deception, the magic tricks in Newton's *Optics*, with the truths – so simple, so understandable, so unmistakable – that Goethe presented; finally, let him consider that Goethe appeared with his work at a time when his venerable brow had been crowned with the well-deserved laurel wreath, and when, at least among the most noble of his age, he had achieved a fame, an admiration that to some extent corresponded to his merit and his intellectual greatness, a time, therefore, when he was certain of universal attention –

and then let him see that against the way of thinking that once more characterizes the human race in general all this could do so little, could do absolutely nothing at all. Upon such consideration let him not in the least draw back his hand, but let him complete his work because it is the blossom of his life that will bear fruit; let him submit it, but knowing to whom and prepared.

a *Volle Thätigkeit*

b *Helle*

c *Finsterniß*

d *Begriff*

e *Erscheinung*

f *Leitfaden*

g *innern Beziehungen*

h *Trübung*

i *Beschaffenheit und Gesetzmäßigkeit*

a *Modifikabilität*

b τῶν γὰρ ἐναντίων τὰ ἐναντία αἴτια (*nam contrariorum contrariae sunt causae*) *de generat. et corrupt.* II, 10 [I, 336a, 30–31]

c *Lehre vom Objektiven der Farbe* [i.e. a theory considering colour as lying outside of the subject, as opposed to Schopenhauer's theory, which considers colour subjectively]

d [For an explanation of these terms see § 13 below]

e οὐ μόνον πάσχει, ἀλλὰ καὶ ἀντιποιεῖ τὸ τῶν χρωμάτων αἰσθήτηρίον (*non modo partitur sensorium, quo natura colorum percipitur, sed etiam vicissim agit*), *de insomniis*, 2 [460a, 24–26]

a *glänzend*

b *Milderung*

c *Trübe*

d *Einwirkung*

e *Halbschatten*

a von selbst *geriethe*

a toto genere *verschiedene*

b [Schopenhauer uses the word *Autopsie* in the literal sense of its Greek origin, a seeing for oneself, αὐτο + ὄψις]

c *Mit bloßen Worten herumschleppen*

a *Sehkraft*

b *physiologische Farbenspektrum* [*Spektrum*, as a borrowing from the Latin, *spectrum*, 'image', might be translated as 'afterimage' when

Schopenhauer refers to an image arising or remaining after strong stimulation, even with closed eyes; however, Schopenhauer uses the word both in this sense and in the common sense refering to the image cast by refraction through a prism. Irregularly, Schopenhauer uses ‘Newtonian spectrum’ for the latter and ‘physiological colour spectrum’ for the former]

c *Phänomens*

d *Urtheilskraft*

a *Hälften* [i.e. always two and only two parts, but not necessarily mathematically halved]

b *Dunkel*

c *durch Verdunkelung*

d *durch Verblassung*

e *Dunkelheit*

f *Finsterniß*

a *unwirksamste*

b *wesentlich*

c *Wirksamkeit*

***** If need be, one can find at the end of § 13 [in edition A, § 15], a statement of two experiments, which can serve as proof of them.

a χρώματα κατ᾽ ἐξοχήν, *couleurs par excellence*

b *Phänomen der Bipartition*

c [literally the title of Rosas’ book, *Handbuch der Augenheilkunde* (1830)]

d *per fas et nefas*

e *selbstevident*

f [See p. 335 below (Hübscher *SW* 4, 14)]

a *Tonleiter*

b *Leiter* [*Leiter* and *scala* both mean ‘ladder’]

c *Zahlensverhältniß*

d *de sensu et sensibile*

e ἔστι μὲν οὖν οὕτως ὑπολαβεῖν κ.τ.λ. [See 439b25]

f [For the complete passage, see 439b25 to 440a6]

***** *anticipationem, quam appellat* προλήψιν *Epicurus, i.e., anteceptam animo rei quandam informationem, sine qua nec intelligi quidquam, nec quaeri, nec disputari potest. (Cic[ero]. de nat[ura]. Deor[um].* I*, 16)* [‘Anticipation, which Epicurus called *prolêpsis*, i.e., an innate idea of a thing in the mind without which nothing can be recognized, or explained, or questioned.’ Cicero, *On the nature of the gods*]

a *Nervennatur*

b *Beschaffenheit*

c *natürlichen*

d [derivatively; literally ‘from something stronger’]

a *Ur-Farben*

b *Dualität*

a in specie *entgegengesetzte,* in genere *aber identische*

b *Indifferenzpunkt*

c ἐπειδὴ οὖν ἡ φύσις δίχα ἐτμήθη, ποθοῦν ἕκαστον τὸ ἥμισυ τὸ αὑτοῦ, ξυνῄει [*Plato, Symposium* 191a]

d *Obduktion*

a σκιερόν [shaded, shadowy, or shadow-like nature (of colour); Schopenhauer always gives the word in Greek script, we transliterate throughout]

b *bedingt keinen eigenthümlichen Effekt*

c *Reiz* [elsewhere ‘stimulus’; the word can also mean ‘charm’]

a *qualitas occulta*

b *Spartam quam nactus es orna!* [Joannes Stobaeus, *Florilegium*, 39, 10, ed. Gaisford (1823–4)]

a *Ahndung*

b *Non aliter, si parva licet componere magnis*, Virgil, *Georgics* IV, 176

c Γνῶθι σαυτόν

a [Goethe, *Zur Farbenlehre*, Weimar edn, Pt. II, Vol. 1, p. XXXIII, 13–16; *Theory of Colours*, trans. Charles Lock Eastlake, Mineola, NY: Dover, rpt. 2006, p. XXVII]

b *qualitas occulta* (*colorifica*)

a *unzersetzt*

b *Vereinigung*

c *ein ihr unwesentliches Schwarz*

a [See § 13 below]

a *Repräsentant*

b *Activität*

c σκιέρον [shaded, shadowy, or shadow-like nature; the Greek term used by Goethe and introduced in § 7 above]

d *caput mortuum* [a residue]

e *dargestellt*

a *zarter*

b *Versuch*

c *dreifaches Sonnenlicht*

d *Lichtes*

e *Lichtern*

f *Experiment*

g [*Optiks or A Treatise of the Reflections, Refractions, Inflections & Colours of Light*]

a *Habilitationsschrift*

a [Hermann Helmholtz 'Über die Theorie der zusammengesetzten Farben' in *Annalen der Physik und Chemie*, ed. Poggendorff, Vol. 87 (1852), pp. 61–3]

b *Pseudotheorie*

c *Abhandlung von den zufälligen Farben*

***** In the 3rd volume of *Kosmos*, Humboldt discusses colours as an orthodox, imperturbable *Newtonian* in the following passages: pp. 86, 93, 108, 129, 169, 170, 300 and especially p. 496 and note 539 ('the most refractable colours in the spectrum, from blue *to* violet, are complemented by the less refractable, from *red* to *green*, to form white [!]. Yellow moonlight appears white during the day because the blue layers of atmosphere through which it is seen provide the complementary colours for yellow'! and he proves his qualifications to make judgements on colours, p. 295, where he discusses *reddish-green*! He was very fortunate to have a monument set up to him during his lifetime, since after his death it would never occur to anyone to do so

a *ex suppositis*

b *Eléments de physique* [*expérimentale et de météorologie* (1827)]

c ‘*l'orangé et le vert donnent du jaune*’

a [*On the Theory of Colours*, Didactic Part, § 583]

b *Färbung*

a [Schopenhauer cites Georges-Léopold-Chrétien-Frédéric-Dagobert, Baron Cuvier, *Leçons d'anatomie comparée*, Vol. I (Paris, 1835)]

b *Darstellung der Farbenlehre* [*und Optische Studien*] (1853)

c [*Eléments de physique expérimentale et de météorologie*, 5th edn, 2 vols. Paris: Béchet, 1847]

a *aller Farbenerscheinung*

b *Multi pertransibunt et augebitur scientia.* [This remark closes the ‘Concluding Observations’ of the didactic part of Goethe's *On the Theory of Colours*. See Hübscher ‘Übersetzung und Nachweis der Zitate’, *SW* 7, 174–5]

c *Wesen*

d *Natur*

a *achromatische Refraktor*

a *Farbenzerstreuung*

b *ex hypothesi*

c *Zerstreuung*

d *des Sonnenbildes*

a *Dispersion*

b *Netzhaut* [to this point, Schopenhauer has used the Latinate *Retina*. See *WWR* 2, ch. 12 in Hübscher *SW* 3, 134–6]

c *nächste*

d *entferntere*

a *Urphänomen* [In both German and the English coinage *urphenomenon* the prefix *ur-* occurs in other combinations to indicate something primordial, primitive, original – something as a source, something non-derivative. The prefix is used here to indicate more specifically a source from which related phenomena are derived, but which is itself not derivable from or explicable by other physical phenomena]

b *Akribologie*

c *Natura non facit saltus*. [Hübscher,'Übersetzung und Nachweis der Zitate', *SW* 7, 174, attributes this to Carl Linnaeus *Philosophia Botanica* (1851). Also, the law of continuity is frequently attributed to Aristotle in *History of Animals* 588b4 and *On the Parts of Animals* 681a]

d *ganz abrupt*

e *Das Reich der Wolken* [Heinrich Birnbaum, *Vorträge über der Physik des Luftkreises und der atmosphärichsens Erscheinungen*. Leipzig: Otto Spamer, 1859]

a *Refraktion*

b [Schopenhauer uses the word *Autopsie* in the literal sense of its Greek origin, a seeing for oneself, αὐτο + ὄψις]

a *Urgrün*

***** However, the sum of these, white light, in equal proportions! I add as a supplement

a *Accidenz*

b *Münchner Gelehrten Anzeigen* [Col. 680] nach den *Philosophical Transactions* [*of the Royal Society of London*]

a *Accidenz*

b *Intelligenz*

a *auf konsensuelle Weise*

b *nachahmen*

c *mechanische Erschütterung*

d *Blendung*

e [*On the Theory of Colours* Didactic Part, § 40]

a *Dämmerung*

b *aufgeregt*

c *Onanie*

d *Geschlechtstriebes*

e *Drang*

f *Traité* [*contenant*] *la manière de changer* [*notre*] *lumière artificielle* [*de toute espèce*] *en une lumière semblable à celle du jour*

***** J. F. Hartknoch, in the year 1815

a *des Hellen und Dunkeln*

b *getuschtes Bild*

a ‘*Farbenblindheit während der Schwangerschaft, nebst einigen* [*zeitgemäßen*] *Erörterungen über Farbenblindheit* [*und deren Ursache*] *im Allgemeinen.* [*Eine physikalisch-physiologische Skizze*]’*…im Archiv für physiologische Heilkunde* [ed. C.A. Wunderlich, New Series 2. Vol. xi, 1858, pp. 41ff.]

b *der engsten Bedeutung*

c *im engsten Sinne*

d *Phänomen*

e *wissen*

a *zufällig* [also ‘accidental’]

b *Erkenntniß*

c *hätten eben* per accidens

d *punctum controversiae*

e *Gesetzmäßigkeit*

a *der im Körper schlummernden Elektricität*

b *harmonia praestabilita* [allusion to Leibniz's claim that there is a *praestablished harmony* among monads. See *Monadology* Sections 56–59]

c *potentialiter*

a *nur Spaaß*

a *menstruum*

b τῶν γὰρ ἐναντίων τὰ ἐναντία αἴτια (*nam contrariorum contrariae sunt causae*) [I, 336a, 30–31]

a *conversa causa, convertitur effectus* [Baumgarten, *Metaphysica*, 1763, § 327]

b *bis zur Undurchdringlichkeit verdichtet*

c *Halbirung*

a *Endursachen*

b [See p. 241 above [39]]

c [i.e. Fig. 8, p. 257 above]

d [*Quassia amara* and *Lignum nephriticum*, tropical hardwoods]

e *Bedeutung*

a *qualitas occulta*

b *verhältnißmäßigem*

c *sublimirt*

d *des goûts et des couleurs il ne faut disputer*

e *nimium non crede colori*

***** This experiment by Saussure is mentioned by Schelling in 'The World Soul', p. 38. [*Von der Weltseele, eine Hypothese der höhern Physik zur Erklärung des allgemeinen Organismus*. Hamburg: Friedrich Perthes, 1798]

a *Reagens*

a *Beschaffenheit*

b *freies, also weisses Sonnenlicht*

***** Observations on the treatise *de affinitate colorum, in opera inedita Tobiae Mayeri, cura Lichtenberg* ['On the Relations of Colours', in *The Unpublished Works of Tobias Mayer*, ed. Lichtenberg; *Opera inedita Tobiae Mayeri, cura Lichtenberg, De affinitate colorum*, Anmerkungen, Göttingen 1775, Bd. I, S. 93ff.]

****** *Physical Library*, Vol. 1, Pt. 4, pp. 403ff.

*** *Description of a Colour Pyramid*, Berlin, 1772 [*Beschreibung einer mit dem Calauschen Wachse ausgemalten Farbenpyramide, wo die Mischung jeder Farbe aus Weiß und drey Grundfarben angeordnet, dargelegt und derselben Berechnung und vielfacher Gebrauch gewiesen wird*]

a *Précis élémentaire de physiologie…*[Vol. 1, 2nd edn. Paris: Méquignon-Marvis, 1825]

b *Über das Sehen des Menschen.* [*Ein populär wissenschaftlicher Vortrag*. (*On Human Vision. A Scientific Lecture for the General Public*.) Leipzig, 1855]

c *Comptes rendus* [*hebdomadaires des séances de l' Académie des Sciences, Juillet-Décembre* 1856, *Séance du lundi 22 Septembre 1856, Correspondance, Astronomie, Travaux de l' observatoire du Collège Romain, Lettre du P. Secchi à M. Élie de Beaumont; Tome 43, p. 623*]

d *dunstförmig*

e *mattgeschliffenes*

* In the *Review of the Two Worlds* [*Revue des deux Mondes*] of 1 January 1858 *Babinet* says that since the solar eclipse in March will be almost total and only $^{a}/_{10}$ of the sun will remain, a light passing through a narrow opening will cast on the wall, not a circle, as at other times, but rather a lunette, a small segment similar to a new moon. This confirms *Goethe's colour theory*, since it proves, as Goethe taught, that it is not a beam of light that passes through the aperture [*foramen exiguum*] but a small *image of the sun*, which is then displaced by refraction. [This remark is a handwritten addition to Schopenhauer's copy of edition B. For its placement and attribution, see the discussion for p. 82, lines 28–36 at Hübscher *SW* 1, 'Anmerkungen zu "Sehen und Farben"' 16]

a Φαίνεται τὸ λαμπρὸν διὰ τοῦ μέλανος, ἢ ἐν τῷ μέλανι (διαφέρει γὰρ οὐδέν), φοινικοῦν. ὁρᾶν δ’ ἔξεστι τό γε τῶν χλωρῶν ξύλων πῦρ, ὡς ἐρυθρὰν ἔχει τὴν φλόγα, διὰ τὸ τῷ καπνῷ πολλῷ μεμῖχθαι τὸ πῦρ, λαμπρὸν ὄν καὶ λευκόν· καὶ δι’ ἀχλύος καὶ καπνοῦ ὁ ἥλιος φαίνεται φοινικοῦς (*quodcunque fulgidum est, per atrum, aut in atro (nihil enim refert) puniceum apparet: videre enim licet ignem, e virentibus lignis conflatum, rubram flammam habere; propterea quod ignis, suapte natura fulgidus albusque, multo fumo admixtus est: quin etiam sol ipse per caliginem et fumum puniceus apparet*) [374a, 3–8]

b [*Eclogarum physicarum et ethicarum libri duo*, Book I, ch. 31]

c *Trattato della pittura*

d ‘Über die Farben, welche trübe Medien im auffallenden und durchfallenden Lichte zeigen’ [in the *Sitzungsberichten der Kaiserliche Akademie der Wissenschaften zu Wien*, 1852, Mathematische-naturwissenschaftliche Classe, Vol. 9, pp. 536–7]

a *pereant qui ante nos nostra dixerunt* [Hübscher suggests (*SW* 7, 178–9) that Schopenhauer's source is Laurence Sterne, *The Koran*]

b *Obductum tenuitque diu quod tempus avarum,/Mi liceat densis promere de tenebris*. [*Della causa, principio ed uno*, preface 19, in the poem, *Giordano Nolana a’ i principi de l'universo*, Venice, 1584]

***** It is for the gods never to err, and always to hit the mark./Mortals are never granted escape from their fate. [From a poem by Simonides: Schopenhauer provides his own translation in a footnote]

a *credite posteri!* [Horace, *Odes* II, 19, 2]

b *Opposition*

c *ex cathedra*

d *Neigungen*

e [*Theory of Colours*, London: John Murray, 1840; reprinted Mineola, NY: Dover, 2006]

f [October 1840, No. 145, pp. 99–131]

a πὺξ καὶ λάξ [literally: hand and foot]

b [pp. 212–13]

c *Sancta simplicitas!* [literally, 'Holy simplicity!' attributed by Zincgref-Weidner, *Apophthegmata*, Amsterdam (1653) 3: 383, to Johann Hus, burning at the stake, as he saw a farmer put another piece of wood on the fire]

d '*Mémoire* [*sur la constitution du spectre solaire,*] *présenté à l'acad[émie] des sciences* [*dans sa séance du 13 juin 1842*]' [in *Bibliothèque universelle de Genève, nouvelle série*, 40 (1842), p. 342]

e *si on réfracte un faisceau de rayons solaires à travers un prisme, on distingue* assez nettement *sept sortes de couleurs, qui sont: le rouge, l'orangé, le jaune, le vert, le bleu, l'indigo* [more precisely, '*Si l'on réfracte un faisceau de rayons solaires à travers un prisme de flint-glass, et qu'on reçoive sur un carton blanc l'image oblongue réfractée, on distingue assez nettement sept sortes de couleurs, ou sept parties de l'image qui sont colorées chacune à peu près de la même teinte: ces couleurs sont: le rouge, l'orangé, le jaune, le vert, le bleu, l'indigo et le violet; cette dernière étant celle des rayons les plus réfrangibles*'. In the text Schopenhauer encloses his interjected remarks in brackets]

a *assez nettement*

b [Vol. 2, p. 212]

c *ignoratio elenchi!*

d *völlig unmotivirten Nebenumstände*

e *in majorem Neutoni gloriam*

***** See *The World as Will and Representation,* 3rd edn. Vol. 2, pp. 358ff. [Hübscher *SW* 3, 357ff. This note results from Schopenhauer's handwritten addition, inserted on a separate leaf, in his copy of edition B]

a [Lines 1–8 from Goethe's poem, ‘Dem Weißmacher’ (‘On the Whitewasher’)]

b *Existenz*

c *Comptes rendus* [*hebdomadaires de séances de l’ Académie des Sciences, Juillet-Décembre 1858, Séance du lundi 6 Décembre 1858, Astronomie remarques présentées par M. Le Verrier; Tome 47, p. 893*]

a [Schopenhauer is referring to Jules Jamin, ‘La physique depuis les recherches d’Herschel, I. Melloni et ses travaux sur la chaleur rayonnante’, in the *Revue des Deux Mondes*, 1854, Vol. VIII, pp.1121–2]

b [Pouillet–Müller, *Lehrbuch der Physik und Meteorologie*, 2nd edn (1844–5)]

c [Pouillet, *Éléments de physique expérimentale et de météorologie,* 5th edn (1847)]

d [Pouillet–Müller, *Lehrbuch der Physik und Meteorologie*, 2nd edn (1844–5)]

a *Komplikation der Bedingungen*

b [Pouillet's *Lehrbuch der Physik und Meteorologie*, ed. Johann Müller. Braunschweig, 1847, Vol. 1, p. 431]

c *Comptes rendus* [*hebdomadaires des séances*] *de l'Ac*[*adémie*] *d*[*es*] *sc*[*iences*]*,* [Janvier-Juin 1855, Séance du Lundi]16 April 1855, [*Physique, Sur la lumière électrique (Extrait d'une lettre de M. Masson),* Tome 40, p. 916: 6]

d *rayes brillantes*

e *où le calcul commence, l'intelligence des phénomènes cesse*

a *radotiren* [Schopenhauer may be echoing a line from Goethe: '*Ich mag darüber nicht weiter radotieren' – Die Leiden des jungen Werther (The Sufferings of Young Werther)*, Book I, 29 June]

b *Dämpfung*

a *turpe putant, quae |imberbi didicere, senes perdenda fateri* [*Horace, Epistles* II, 84–5]

b [Goethe*, Wilhelm Meisters Lehrjahre* (*Wilhelm Meister's Years of Apprenticeship*) (1795–6), Book 7, ch. 9, *Lehrbrief*]

c *le mérite est comme la poudre: son explosion est d'autant plus forte, qu'elle est plus comprimée.* [Helvétius, *De l'esprit*, Paris (1758): Discours II, ch. X, Vol. I, p. 174]

Variants in different editions

A 1816: *On Vision and Colours* (*Ueber das Sehn und die Farben, eine Abhandlung vom Arthur Schopenhauer*. Leipzig: Johann Friedrich Hartknoch, 1816). The entire 1816 version is provided in the Deussen edition of Schopenhauer's works, Vol. 6; handwritten additions are given as provided in Hübscher, *SW* 1.

B 1854: *On Vision and Colours* (*Ueber das Sehn und die Farben. Eine Abhandlung vom Arthur Schopenhauer. Zweite, verbesserte und vermehrte Auflage.* Leipzig: Johann Friedrich Hartknoch, 1854), as provided in Hübscher, *SW* 1. This text provides the basis for the present translation. The present translation excludes minor stylistic variants and spelling changes. Wherever Schopenhauer quotes English in the original, we provide the text as he quotes it. We note those instances in which Hübscher follows Frauenstädt's inclusions of handwritten additions.

1 ‘they unquestioningly accept the objective…exists’ is a handwritten addition to B.

2 ‘actual’ (*wirklichen*) is a handwritten replacement for ‘absolute’ (*absoluten*) in B.

3 The initial sentence of this paragraph is added in B.

4 ‘for, as Jean-Paul correctly observed…(*Aesthetics*, Vol. 3, p. 861)’ is added in B.

5 ‘and only shows how it comes about, not what it is. Physiological colours…his principal theme’ is added in B.

6 ‘The importance of theory is most brilliantly illustrated…towers above all earlier sciences’ is added in B.

7 ‘That he felt this himself…however, it is not so essential to our subject that I have to repeat it here’ is added in B.

8 ‘…ultimately only with respect to colour considered as physiological appearance…’ to the end of the paragraph, reads in A as follows: ‘but this only with two restrictions not to be overlooked: first only in outline, second, ultimately only with respect to colour considered as physiological appearance; but as a result of the presentation to be given here, his consideration must comprise the first half, indeed the more significant half of the whole theory of colour to which, from a theoretical perspective, the second half, which considers physical and chemical colours, always stands in a dependent and subordinate relation, even if it is the richer in facts’.

9 After ‘true theory’, the following parenthetical remark is omitted from B: ‘(and, thus, in the case that there is such a theory)’.

10 ‘Nevertheless my departure from Goethe on this point became the reason why…’ through to ‘…as he also mentioned in the letter cited above’ replaces the following in A: ‘In any case, such corrections, which stem automatically from an established theory, neither redound to the credit of the theorist who produced them nor are of any appreciable detriment to the empiricist who has experienced them. For one who opens a new field of science empirically, discovering a mass of facts and presenting them in the order of their immediate connections, is like one who discovers a new land and sketches a preliminary map of it. The theorist, however, is like one among those who is led to the new land, and who then climbs a high mountain there, and from the peak surveys the land in a single glance. That he ascended was his own doing: but that he now looks from the heights to where those who wander about below miss the shortest path, and that he more precisely determines the relations of mountains, streams, and woods – this all now occurs without difficulty and without special merit’.

11 In A ‘critique of the cognitive faculty’.

12 ‘most thoroughly by *Locke…*’ through to ‘…cannot say whether it resembles him’ is added in B.

13 ‘of the thoroughly subjective nature of colour’ replaces ‘of it’ in A.

14 The final paragraph of the Introduction in B replaces the following final paragraph of the Introduction in A: ‘Thus what concerns the faculty of cognition in the first chapter is given a more thorough, although still in no way exhaustive exposition, in my treatise on the principle of reason, acquaintance with which is generally necessary for a complete understanding of what is said here, especially in order to avoid a great deal of misunderstanding. E.g. without this acquaintance perhaps many will believe that for cognition I posit that the object is related to the subject as cause is to effect, an opinion that appears to me just as confused as the opposite, which makes the subject of cognition the cause of the object, and is the most recent form of idealism’.

15 B omits after ‘the body’ the parenthetical phrase ‘(the immediate object of the subject)’.

16 ‘This specific difference of sensation in each of the five senses’ through to ‘so long as the external apparatus of each exchanged places. – ’ is added in B.

17 ‘that resembles the many blobs of colour on an artist's palette’ is added in B, and a paragraph break before ‘In the first weeks of life’ below is added in B.

18 From the beginning of the paragraph ‘What has been said here about intuition will become even clearer through a more specific consideration of the matter’ through to ‘even to the extent that the direction from the same point of the object is a different me for each eye’ replaces the following in A: ‘What has been said here about intuition will become even clearer through the following consideration. It also belongs to the acquisition of intuition that although the child sees with two eyes, each of which receives an image of the object, even to the extent that the direction from the same point of the object is a different one for each eye – nevertheless the child learns to see only *one* object'.

19 At this point in A, a lengthy footnote is included: 'A thorough presentation, made clear through many figures, of the relations of the optical axes and the phenomena produced by them can be found in *Robert Smith's Optics*. I prefer this explanation over any other explanation of single and double vision with which I am familiar. In most recent times, of course, the subject is presented quite differently, specifically that of Dr Troxler in the third volume of the *Opthalmological Library*: there it is taught that the right eye is one pole and the left eye is another pole and crossing the eyes would cure double vision. Nevertheless, since natural philosophers proceed by simply asserting and revealing, more so than by proving and inducing, one is also not obliged to provide a counter-argument. Moreover, a comparison of these essays of Dr Troxler with the *Optics* of *Robert Smith* provides material for a very interesting observation of the contrast between the influence on the natural sciences that Locke's philosophy had at that time and that Schelling's philosophy has today. – Deserving, in my opinion, more regard than the aforementioned essay of Dr Troxler, is a new theory of single vision with two eyes provided by Dr Weber in the sixth volume of Reil's *Archive for Physiology*. He accepted as his sole datum Prof. Ackermann's anatomical discovery of the partial decussation of the optical nerves (the correctness of which I cannot determine) and, indeed, made a clever application of it for a new theory of single vision. I nonetheless find this in no way tenable. Anyone who has a modicum of acuity and brings to it some philosophical education and physiological knowledge can easily see the insurmountable difficulties to which it is subject. For this reason I will not provide a thorough critique of it here, especially since such a critique could take up as much space as this entire treatise. Only this much will I briefly note: that theory does not really explain single vision with two eyes; rather, since it shifts that which in vision is merely sensation from the retina to the optic thalamus, it merely pushes the question farther back, turning it into a new one: why do we not see doubled with two optic thalami? Moreover actual double vision (rather than an object's appearing doubled, which sometimes arises by crossing the eyes, sometimes by directing the axes of vision to a closer or farther object) thereby becomes an insoluble problem since asymmetrical positions of the optical axes have absolutely no influence on the activity of the optical nerves and optical thalamus, which nevertheless must be the places of sensations producing vision. Finally, in the greatest contradiction and completely irreconcilable with this theory are the quite noteworthy investigations of *Du Tours*, explained in his essay in the third volume of *Mémoires Présentés à l'Acadèmie Royale des Sciences* p. 514. In general, however, the singleness of the *intuited* object when the *seen* object is double not only cannot (as Dr Weber seeks to demonstrate) be explained through optics alone, but also (contrary to what he wants) cannot be explained through physiology alone, for single vision arises in the understanding and for the understanding, as I want this chapter to make clear. What still deserves special rebuke is Dr Weber's claim that it is a settled fact that one sees green when blue glass is held before one eye and yellow glass is held before the other: of course, this would be good evidence for his hypothesis, but it is absolutely not the case and the claim is completely false. Through the following experiment one can be convinced still more clearly of the impossibility of producing a third colour by way of combining two colours while each eye sees a different one. If one looks at a yellow and a blue piece of paper with crossed eyes (and since one will now see both doubled, one would cross the one coloured yellow with the one coloured blue) then one would see both at the same time in the same place, transparently and superimposed, but by no means would a green colour arise'.

20 The final two sentences of this paragraph are added in B, the sentence referring to Smith's *Optics* coming almost verbatim from the first sentence of the note in A.

21 These parenthetical citations were handwritten additions found in Schopenhauer's copy of B.

22 A long passage from 'A visual presentation of the matter can be found in the illustrations in the second edition of my treatise *On the Fourfold*

Root…' through to 'I now return to our theory of empirical intuition' is added in B.

23 This sentence was a handwritten addition found in Schopenhauer's copy of B.

24 A long passage from 'But a still more striking, if much rarer, proof of our theory…' through to 'Now at the same time, however, this observation offers' is added in B.

25 'or we know that two are present although we see only *one*' is added in B.

26 'or a stick thrust in water…i.e., according to obscurity through haze' is added in B.

27 'thus, error is an actual, but false judgement, a baseless abstract supposition' is added in B.

28 'and thus is groundless' is added in B.

29 'sensible' is added in B and 'of the immediate object' is omitted in B.

30 'An illusion, however, cannot be eliminated through abstract cognition based on reason; e.g. the moon does not appear smaller when one reasons that it appears enlarged when it is viewed through an atmospheric perspective and when it is viewed horizontally through the increased density of a haze. However, the illusion can gradually disappear if its cause is persistent and the unusual becomes usual', reads in A: 'An illusion, however, cannot be eliminated except as the unusual gradually becomes usual'.

31 'But if someone through an accident, e.g., paralysis of the eye muscles, *suddenly* is compelled to constantly be cross-eyed…' through to the end of the paragraph is a footnote in A. The two sentences ‘In the same way, anyone who always held his fingers crossed would ultimately no longer feel double. But so long as someone crosses his eyes in a different optical angle each day, he will see everything double’ are added in B.

32 ‘and of the *Hedysarum gyrans*’ is added in B.

33 ‘directly and simply’ is added in B.

34 ‘in order to work, they always require contact, frequently even intussusception, but always a certain duration and intensity of influence’ reads in A: ‘that the degrees of the effects of each stimulus are among one another always in relation to the duration, distance, and intensity of the stimulus’.

35 ‘This very important distinction…’ through to the end of the paragraph is added in B.

36 ‘…and I turn to a very specific and subordinate part of intuition’ through to ‘which in any case clothes intuited bodies as a unnecessary addition. For…’ is a handwritten addition to Schopenhauer's copy of B.

37 ‘which like the forms of space and time lying at its basis, is the function of the brain’ is a handwritten addition to Schopenhauer's copy of B.

38 ‘For intuition, i.e., the apprehension of an objective material world filling space in its three dimensions….’ through to ‘The senses are merely the starting point of intuition of the world’ reads in A: ‘As was discussed above, albeit only in a very general way, intuition, i.e., apprehension of an objective world, the parts of which are separated by space and are united through the law of causality (which makes up for the contradiction between the rigid immobility of space and the unceasing flight of time, by uniting both) arises through the understanding, for the understanding, in the understanding. Animal bodies are immediate objects of the subject, i.e., of that which cognizes everything, but itself is never cognized. They are the starting point of intuition of the world’.

39 For ‘apprehend’ [*auffassen*] A reads ‘is cognized’ [*erkeannt wird*].

40 For ‘perception’ [*Wahrnehmung*] A reads ‘cognition’ [*Erkenntniß*].

41 Throughout this work, except where noted, in B ‘retina’ generally replaces ‘eye’ in A, most often in the phrase ‘activity of the eye’ (in A), ‘activity of the retina’ (in B).

42 ‘sensed’ [*empfunden*] in B; ‘perceived’ [*wahrgenommen*] in A.

43 ‘thorough’ [*gründliche*] in B; ‘philosophical’ [*philosophische*] in A.

44 ‘investigate’ [*untersuchen*] in B; ‘present’ [*darzustellen*] in A.

45 A substantial passage from ‘For in order to work properly and deliberately…’ through to ‘…different consideration of the external causes of those particular modifications of the sensation of light’ is added in B.

46 ‘Even with special reference to the eye…’ through to ‘…*Darwin's Zoonomia*, pp. 19ff.’ is added in B, the second sentence of which is a footnote in A.

47 ‘and, indeed more precisely, the activity of the *retina*, since this is undoubtedly the seat of that which in vision consists of mere sensation’ is added in B.

48 ‘*inactivity* of the retina occurs’ in B reads in A: ‘yields *inactivity* of the eye’.

49 In A this initial sentence reads: ‘Just as we found the activity of the eye to be intensively divisible, so too, since it is inherent in an extended organ, the retina, this activity can be extensively divided, through which an *extensive divisibility of the activity of the eye* is constituted’.

50 ‘at any rate, it is not (as one might be inclined to believe) spontaneous – that is,’ is added in B.

51 ‘(though the eyes must also be covered by one's hands)’ is added in B.

52 ‘as Goethe has also indicated (*Theory of Colours*, Vol. 1, Pt. 1, § 20)’ is added in B.

53 ‘If, however, in doing this, one neglects to cover the eyes with one's hand…’ through to the end of the paragraph is added in B.

54 This paragraph is added in B.

55 ‘for 20 to 30 seconds’ is added in B.

56 ‘however, he did not go beyond this. But at present…’ to the end of the paragraph replaces in A: ‘I assume acquaintance with this presentation, or at least with those mentioned earlier in the introduction. – Now it seems to me that from the intuition of the aforesaid phenomenon – from attentive comparison of what follows in the eye after a white disk with that which follows after a yellow disk – it should be increasingly evident that the following explanation arises, the evidence for which will come merely from our further observation of the various modifications of this phenomenon’.

57 The initial sentence of this paragraph in B (‘Unlike when the *white* disk was presented…following as a *violet* spectrum’) continues the same paragraph in A, but reads as follows: ‘Unlike when the *white* disk was presented to the eye, when the *yellow* disk was presented, the *full* activity of the eye was not called upon, but this activity has now qualitatively divided and has separated into two halves, one of which presents itself as yellow, and the other, in contrast, now in and of its own accord remains – without a new, external stimulus – appearing as a *violet* spectrum’.

58 ‘and *in this sense*’ is added in B.

59 ‘or of white’ is added in B.

60 In B ‘All the colours are placed on this equator with completely undetectable transitions…’ through to ‘…but accidental, admixed white diminishes this energy’ replaces in A: ‘It is the point of greatest energy of each colour, but just for this reason it has an intrinsic and essential approximation to white, or a kinship with the impression of full light, and again a converse relationship corresponding to its approximation to darkness. The intrinsic whiteness essential to colour is very different from all whiteness given to it through accidental admixture, since in this state colour retains its greatest energy, but accidental, admixed white diminishes this energy’.

61 ‘that is, *orange*’, is added in B.

62 At this point A has the following parenthetical passage, omitted in B: ‘(Goethe's purple, a red that in no way tends toward yellow nor toward violet)’.

63 ‘However, here Goethe's purple is to be understood as *red*…’ through to ‘just like its complement, perfect *green*’ is added in B.

64 In B, ‘…therefore, no other colour bears comparison with them, and I prefer to call these two completely equal halves of the qualitatively divided activity of the retina, red and green, colours *par excellence* because they exhibit the phenomenon of the bi-partition of the activity of the retina to the utmost perfection’ replaces the following in A: ‘so that I would like to call these two completely equal halves of the qualitatively divided activity of the eye, purple and green, colours *par excellence* [χρώματα κατ᾽ ἐξοχήν, *couleurs par excellence*]'.

65 'For in every other pair of colours…the quantitative is not directly felt' is a handwritten addition.

66 'Finally, if our disk, which was *red* just now…pass through the same circle in the opposite direction' is moved in B from its location in A at manuscript p. 40 as given by Deussen. Note the addition of the parenthetical '(violet)' in B.

67 In B 'but they receive such decided, immediate confirmation and persuasive power from intuition that hardly anyone will sincerely deny them in earnest, even Professor A. Rosas…' through to '*On Will in Nature,* 2nd edition, p. 15)' replaces in A. 'but they receive complete persuasive power from intuition'.

68 In A the clause reads: 'This applies to no other possible colour'.

69 'as represented on the equator of Runge's colour sphere' is added in B.

70 In B 'Indeed, between them lie innumerable nuances of colour…' through to '(I note that 'τά μὲν' should be inserted before 'τρία γὰρ'.)' replaces in A: 'Perhaps this intrinsic mathematical relation of the colours to one another could also finally provide the point of comparison between colours and tones that has been sought so persistently for so long, but always in vain. However, it must not be assumed that this point of comparison is right on the surface, and it would perhaps generally result in only a one-sided and weak analogy. – Finally, if our disk, which ultimately had been *red*, now passes into *bluish-red*, then the spectrum now becomes *yellow*, and we pass through the same circle in the opposite direction'.

71 'purple' in A.

72 In B: ‘physiological spectrum remaining behind’; in A: ‘follow as a necessary [*gefordertes*] spectrum’.

73 The sentence ‘This happens because the nature of the nerves in the retina requires that…to make itself whole again’ is added in B.

74 ‘must be’ in B; ‘is’ in A.

75 ‘and vice-versa’ is added in B.

76 ‘there are as many colours as one may prefer [*als beliebig*]’ in B; ‘there are as many colours as one may freely choose [*als willkührlich*]’ in A. In A, there immediately follows a clause omitted in B: ‘It appears to me that it is just this that Democritus meant when, according to Plutarch, he asserted “τῷ νόμῳ χροιὴ εἶναι”, i.e., it is not by nature, but freely by convention [*willkührliche Uebereinkunft*] that certain determinate colours are generally accepted. Nevertheless, anyone senses the error of this assertion, and it is evidenced by the fact that among all peoples, at all times…’

77 ‘in a way analogous to regular, geometric figures, which certainly do not appear as perfect in reality, but which are still perfectly known and understood with all their properties’ in B replaces ‘(similar to geometric figures, which in reality certainly are not perfectly given)’ in A.

78 In this sentence, the note to Cicero is added in B.

79 ‘and at the same time the refutation of that Democritean proposition’ in A, is omitted in B.

80 A long passage from ‘Accordingly our test of the purity of a given colour…’, including the chart, all the way through to ‘Accordingly, the true colour theory always concerns *pairs of colours*, and the purity of a given colour is based on the accuracy of the fraction presented by it’ is added in B.

81 ‘real’ is added in B.

82 ‘Herein lies the reason why…the other two taken together’ is added in B.

83 ‘chromatologically’ [*chromatologisch*] is added in B.

84 In A, this sentence is in parentheses.

85 ‘in the period of Schelling's philosophy of nature’ in B; ‘in the most recent times’ in A.

86 ‘unique’ is added in B.

87 ‘They also come under the great Chinese contrast of *yin* and *yang’* is added in B.

88 In B ‘because the brightest colour and the greatest numerical fraction of the negative side…’ through to the end of the section replaces in A: ‘Obviously there is a close connection here to the completely hypothetical supposition that on the + side the retina is predominantly active, on the – side the choroidea is predominantly active’.

89 In B an entire section from A is omitted, such that § 7 in B corresponds to § 8 in A. § 7 from A is as follows:

§ 7 A comparison

1. I shall also mention, quite incidentally, that *Chladni's acoustic figures* provide a comparison (which, if not wholly accidental, is in many respects suitable and enlightening) to the qualitatively divided activity of the eye. These acoustic figures arise as with each tone produced by bowing

[*Streichen*], certain parts that stand in regular spatial relations begin to vibrate, while the rest remain completely still. In contrast, the sound [*Klang*] produced by a blow [*Schlag*] sets all parts of the disk into vibration equally, overall more vigorously or more weakly, yet always equal, while bowing produces many tones and just as many figures. Accordingly the vibration of the disk produced by bowing would be comparable to the qualitatively divided activity of the eye, and that through a blow would be comparable to the intensively divided activity of the eye; and determined [*determinirten*], significant acoustic figures would correspond to colours; in contrast, the grains of sand uniformly distributed by a blow, whether more thickly or thinly, but without figure and significance, correspond to the various degrees of gray. But in considering this, one must always be mindful that what is qualitative in the eye is always merely quantitative on the disk.

90 'But from this division and its various ratios arises a characteristic stimulation…' through to '…white appears so remarkably jejune when found between colours, while gray appears so doleful, and black so morose' is an addition in B, § 8 (which corresponds to A, § 7). 'Likewise, it is understandable why black and white, the absence of the stimulus of colour, symbolize mourning, black for us, white for the Chinese' is a handwritten addition to B.

91 § 8 in B corresponds to § 9 in A.

92 'as objective what is subjective' is added in B.

93 'because he' is added in B.

94 'That in doing so he selected the number seven…' through to the end of the paragraph is added in B.

95 Schopenhauer adds the reference to Newton in B.

96 ‘from the objective to the subjective’ is added in B.

97 In B ‘insofar as philosophers have always surmised that colours belong much more to the eye than to things; for *Locke*, in particular, always placed colours at the head of his secondary qualities of things, and in general, no philosopher…’ replaces in A: ‘and has shown itself in the fact, among other things, that colour is always put among the so-called secondary qualities and that no philosopher…’

98 This paragraph is added in B.

99 § 9 in B corresponds to § 10 in A.

100 ‘represented on the equator of Runge's colour sphere’ is added in B.

101 § 10 in B corresponds to § 11 in A.

102 ‘As a result of our theory, the production of white from two colours…’ through to ‘First of all, it cannot happen when two chemical colours are mixed together, for these then work in combination, not separately’ is added in B.

103 ‘purple’ in A; ‘true red (Goethe's purple)’ in B.

104 ‘(Newton's red)’ is added in B.

105 This sentence, ‘This is Newton's 13th experiment…not seven or innumerable’ is a footnote in A.

106 ‘This experiment can also be conducted with a *single* prism….’ through to ‘…so that the whole spot will appear white’ is added in B.

107 ‘A similar experiment occurs, often even spontaneously…’ through to ‘for the lilac's bluish violet is perfectly complemented by the candle's yellow illumination, which inclines toward orange’ is added in B.

108 The description of Helmholtz's experiment (‘And, finally, in an experiment mentioned by *Helmholtz*’ through to ‘this will produce white’) is a handwritten addition found in Schopenhauer's copy of B.

109 The clause, ‘Finally, by way of exception, all white glass appears to be a white produced by the actual combination of two chemical colours, but found in a transparent state’ replaces the following sentence in A: ‘All white glass is white produced in this way from a pair of colours’. The clause ‘as I have already mentioned in the first edition, that is, in 1816’ is a handwritten addition found in Schopenhauer's copy of B.

110 At this point in A, there is a footnote: ‘Additional very fitting examples of this can be found in an essay of Mr von Grotthuß, in the 3rd volume of the *Contributions to Chemistry and Physics* by Schweigger [‘*Ueber die zufälligen Farben des Schattens und über Newtons Farbentheorie*’, in *Schweiggers Journal für Chemie und Physik,* Vol. III, No. 2 (1811)]. In presenting these examples, Mr von Grotthuß is aware that they are not at all consistent with Newton's theory; however, he believes these examples only need be corrected, and he submits the profession of his unshakeable faith in Newton's theory as if he wanted to protect himself against a charge of heresy. Besides this the essay contains an extended explanation of physiological colour phenomena consistent with Newtonian theory, following the procedure of Father Scherffer and others’. [The remainder of the footnote is retained in, with minor alterations, and omitting a further reference to Grotthuß, but transferred to the main text of B: ‘The inadmissibility of this explanation already follows from the fact that the physiological spectrum is not only seen on a white background, but also is seen perfectly well and clearly on a completely black and even shadowed background…’ through to ‘when a colourless illumination falls on this hue, it becomes attenuated and weakened to a degree, so that, when it strikes the eye, the eye can produce the complement of the coloured illumination’.]

111 Twenty-nine sentences and the footnote, extending from ‘only when one knows how to arrange it so that the two complementary colours, stimulated by external causes, but without being directly mixed with each other, *simultaneously* affect *the same spot* on the retina’, across a paragraph break to ‘However, this construal of the issue is fundamentally false and absurd, and it is unforgivable that it is still held in esteem and imposed on the young forty-four years after Goethe's colour theory, and forty years after this theory of mine’ are added in B.

112 ‘Because he had not pressed to the ultimate ground of all colour phenomena, which is purely physiological, and because he had achieved his aim with the supreme principle of all *physical* colours’, is added in B.

113 In A, ‘a complete absurdity’.

114 This sentence is a handwritten addition found in Schopenhauer's copy of B.

115 This sentence is a handwritten addition found in Schopenhauer's copy of B.

116 The sentence beginning ‘If this were true in a Newtonian sense, or Newton's theory were generally correct…’ through to the end of the paragraph, and eight subsequent paragraphs, to the end of § 10, are added in B.

117 § 11 in B corresponds to § 12 in A.

118 The second and third paragraphs of § 11 are added in B. The equivalent § 10 in A consists of only the initial paragraph.

119 § 12 in B corresponds to § 13 in A, but A bears the slightly different title, ‘On some injuries and a pathological [*krankhaften*] condition of the eye’.

120 ‘They can be rightly called pathological spectra, for’ is added in B.

121 In A, this paragraph begins, ‘I also note this in passing’ and continues as it begins in B.

122 In A, this sentence continues ‘which may be permitted me in this regard’.

123 ‘indeed, all the more, as in this case the division of the activity of the retina…’ through to ‘which it satisfies on the occasion of any otherwise weakly illuminated shadow by immediately colouring it’ is added in B.

124 ‘for which reason, through personal experience, I recommend that glasses be neither too dark nor too thick, for otherwise the appearance of dim light arises’ is added in B.

125 ‘is ultimately given to us by the *Daguerrotype*’ through to ‘Another still more striking proof’ is a handwritten addition found in Schopenhauer's copy of B.

126 Eight sentences, from ‘An additional proof of the subjective nature of colour…’ through to ‘whereupon *Unzer* explained that he could not make judgements about the colouring and told him why’, are added in B.

127 ‘That such an achromatic deficiency can also occur temporarily is to be seen from an essay by Theodor Clemens, “Colour-blindness during Pregnancy, including Some Discussion about Colour-blindness in General” to be found in *Archive for Physiological Therapy*, 1858’ is a handwritten addition found in Schopenhauer's copy of B; ‘(On colour-blindness, see also G. Wilson, *Researches on Colour-blindness*, Edinburgh, 1855.)’ was found on a separate sheet.

128 § 13 in B corresponds to § 14 in A, with the change of ‘eye’ in A to ‘retina’ in B. In A there are 17 sections, of which § 15 (*Difference between* *physical and chemical colours*), § 16 (*Apparent incongruence and actual congruity of the physiological and physical contrast of colours*) and § 17 (*Conclusion*) do not correspond to sections in B. However, as noted at the appropriate points, passages from A, §§ 15, 16, and 17 are incorporated in B, §§ 13 and 14.

129 ‘which as such must be the basis of all further investigations on colour and with which they must always remain consistent. To this first part’, is added in B.

130 ‘i.e., those permanent colours’ through to ‘and transparent media’ is added in B.

131 ‘…that as such are accessible to us’ through to ‘special effect on the eye’ is added in B.

132 in B, ‘secondary image’ (*Nebenbild*); in A ‘double image’ (*Doppelbild*).

133 With minor changes, eight sentences, from ‘Goethe divided these external causes quite correctly and appositely…’ through to ‘…these just happened to have a violet colour, an indigo colour, etc.’ are incorporated here from A, § 15, paragraph 1.

134 The clause ‘by which the sensation of colour exists’ is added in B.

135 The end of this paragraph, from ‘a controversy to be decided in the final instance by facts and experiments submitted to correct judgement’ through to ‘This would be essentially the following’ reads in A: ‘It appears to me that a thorough investigation and systematic presentation of the phenomenon itself and a theory of its rule-governed quality [*Gesetzmäßigkeit*] independent of external causes, can also greatly help to resolve the controversy concerning causes lying externally to the eye. I have attempted to provide such a resolution. Now what can be established from this, our point of view, independently of all experimental investigation of the external causes we have been seeking, and so to this extent *a priori*, would be something like the following'.

136 Two sentences, from 'I know well that Newton sometimes asserts' through to 'and so they absolutely vanish into darkness and become invisible' incorporate in B what in A § 14 was given at this point as a footnote.

137 At this point, B omits a sentence from A as follows: 'This dogma of the division of light could only be taken seriously if it were in some way intuitively representable in just the way it can be expressed in words, or at least thought abstractly [*in abstracto*]: but it is no more so than wooden iron'.

138 At this point, A continues to the end of the section as follows, all of which was omitted from B: 'Remark: Given the opportunity of the mention of Goethe's urphenomenon, through the modifications of which all colours arise, I permit myself the following correction, not strictly germane, which concerns the origin of violet. Concerning this colour, my theory certainly does not agree with Goethe's theory of colour because we must recognize violet as essentially the dimmest of all colours, as it is the least possible qualitative division of the activity of the eye; whereas Goethe portrays blue as the dimmest colour. But as for the physical origin of this blue, Goethe derives it from the fact that a turbidity in front of darkness, which at some degree of density shows blue, yields violet when dimmed to a high degree. Yet in many cases experience contradicts this; e.g. when the sky is seen from high mountains. But upon more precise observation we will find to the contrary that violet arises when a turbidity that is illuminated from the front in turn has behind it something that is illuminated to some extent, or something that reflects the light penetrating the turbidity, rather than complete darkness, in which case blue always arises. So we see a haze as pale violet when sun shines through it onto mountains that reflect some light back on it, as landscape painters also often portray. Furthermore, if, with one's back to the window, one blows tobacco smoke toward an opened book set before oneself, then from this too a faint lilac appears. Indeed, it can be understood completely *a priori* that violet must originate in this way, and not in the way Goethe asserted. For from the understanding's pure insight into the nature of causality, we know that if the cause undergoes a merely intensive, that is, quantitative alteration of one of its determining factors [*Bestimmungen*], then only such a quantitative alteration can be produced in the effect, and a qualitative alteration can never occur; and a completely new determining factor can appear, but hardly one whose cause must be diametrically opposed to the given cause. Application: Complete turbidity, when illuminated, yields white, but if the eye sees into the darkness through an illuminated turbidity, then bright blue arises in it; the less dense the turbidity, the dimmer this blue becomes, and through the greatest possible attenuation the blue must go over into black, but it is impossible to think of a point on this continuum where violet would arise; i.e. where a red would intermix with the blue, since red arises only from the completely opposite cause, light penetrating through a turbidity. Conversely, if the points of light behind a black surface are intermixed, then the appearance will have to be a composite of blue and red, that is, violet. This is confirmed by the phenomena cited by me, and the character of the violet bears the stamp of this tenuous, equivocal, uncertain origin, which is why it shows itself as essentially the dimmest, weakest, palest colour, always in danger of losing itself in gray, but as soon as it turns either to blue or red (i.e. as soon as, by infinitesimal fractions, the ¼ approaches $^{1}/_{3}$ or ½) it immediately becomes brighter and more energetic. – That before the self-same dim ground, a dense turbidity shows blue, but a less dense turbidity (and even the least dense part of the prismatic secondary image) shows violet, must be explained by the fact that any dim ground still reflects some light, which, just because it is weak, only penetrates the less dense turbidity, and not the more dense, for just this reason yielding blue. For it is quite improbable that in actuality there is to be found any absolute black, i.e., any surface that reflects absolutely no light. And it is demonstrable that an absolutely dark space can never immediately adjoin a bright space. For if a completely dark room were ever adjoined to an opening on a illuminated room, then this dark room would immediately be to a certain degree illuminated and one would never face a completely dark space'.

139 Nine sentences that follow are incorporated here in B from A, § 16, paragraph 1, with some minor additions, and the addition of the reference ‘in accordance with the Aristotelian principle cited above, “contrary causes for contrary effects” (*On Generation and Corruption,* ch. 10)’.

140 Thirteen sentences, from ‘In this we now have a complete *a priori* proof…’ through to ‘as is easily understood from the figure given above’ are added in B.

141 Two sentences, from ‘A turbidity of doubled denseness…’ through to ‘Thus physical and physiological opposites fully coincide’ are from the sole paragraph of A, § 16.

142 Two sentences, from ‘Similarly certain turbid solutions of Quassia…’ through to ‘…blown toward the shadow side, blue’ are added in B.

143 Eight sentences, from ‘As a result of all this, the physical contrast of yellow and blue, as put forth by Goethe…’ through to ‘then this polarity of colour could be nothing other than a polarity of this conflict’ are the final eight sentences of the sole paragraph of A, § 16.

144 With minor changes for the sake of the paragraph transition, three sentences, from ‘Now finally concerning chemical colour…’ through to ‘or even totally undetectable alteration in the properties inherent in the body’ are from A, § 15, paragraph 2.

145 Twelve sentences, from ‘So, e.g., the cinnabar obtained through the fusion of mercury and sulphur is black…’ through to ‘It is enthralled like an enchanted prince: the same applies to the chemical colour of a body’ are added in B, excepting that in A, § 15, paragraph 2, Schopenhauer makes brief mention of flower colours and the unreliability of colours.

146 With minor modifications, this sentence regarding tourmalines is in A as § 15, paragraph 3.

147 From ‘A general explanation of chemical colours appears to me…’ through to ‘without melting the sheet of ice’ is added in B.

148 From ‘indeed, even a lens ground from ice…’ through to ‘…collects under the bell, reaching a high degree.)’ is a handwritten addition found in Schopenhauer's copy of B.

149 Five sentences, from ‘Conversely, heat transforms into light with glowing stones, glass, metals…’ through to ‘…while the free, unencumbered course of this process, in white light, reveals itself by the black coloration’ are added in B.

150 The two sentences, ‘Just as heat and light are metamorphoses of one another…’ through to ‘and when its current is impeded in an iron electrode, it then burns’ are handwritten additions found in Schopenhauer's copy of B.

151 The opening two sentences of this paragraph, ‘As I have already said…’ through to ‘…for it is difficult – perhaps impossible – to prove’ are added in B, replacing a single transitional sentence introducing the topic.

152 Eleven sentences, from ‘There have been frequent efforts to seek a precise determination…’ through to ‘But sensation can never be ignored when colours are discussed’ are from A, § 15, the fourth and final paragraph.

153 The five final sentences, from ‘Another way to conduct a proof…’ through to ‘then the refraction must not yield any colour phenomenon’ are added in B.

154 This final section, § 14 in B, corresponds to the final section of A, § 17.

155 These opening three paragraphs are added in B.

156 These two paragraphs, from ‘But even the colour of blue eyes is not a chemical…’ through to ‘Naturally! for we have here a turbidity illuminated by the sun with a dark background’ are handwritten additions found in Schopenhauer's copy of B.

157 Three sentences, from ‘Some spirits, wiped over a polished glass…’ through to ‘cause the coloured rings in all their variations’ are handwritten additions found in Schopenhauer's copy of B.

158 This citation of Leonardo da Vinci's *Treatise on Painting* and Brücke is a handwritten addition found in Schopenhauer's copy of B.

159 This paragraph corresponds to the opening paragraph of A, § 17, but with significant changes as follows: ‘The judgement to which I just again called attention [at the end of A, § 16], about the true polarity of colours, then my opinion on the origin of violet, and lastly the production of white from colours are the three points on which I must differ from Goethe’.

160 ‘thus even now, forty-four years later’ is added in B.

161 The parenthetical discussion of Enke and Bessel is a handwritten addition to B.

162 From ‘– to which there is an entertaining addition…’ through to ‘in it they find comfort’ is a handwritten addition to B.

163 ‘or to be the interstices between the separate, very numerous, and actually homogeneous lights’ is a handwritten addition to B.

164 From various sources, Hübscher constructs twenty-four sentences, across five and half paragraphs, from ‘And this is very natural, for anyone is able to increase practical experience, especially through the piling up and complication of conditions, but a rare few are able to interpret them’ through to ‘This marvel must be derivable from the principles given above’.

For a detailed discussion see Hübscher *SW* 1, ‘Anmerkungen zu “Sehen und Farben” ’, 16.

165 Eight paragraphs and the initial sentence of a ninth, from ‘In order to understand the fate of Goethean colour theory…’ through to ‘The grave injustice which Goethe had to suffer in regard to his colour theory has very many causes, and enumerating all of them would be as inconsiderate as it would be cruel’ are added in B, except Schopenhauer's handwritten additions as noted.

166 This sentence, ‘Meanwhile, the day of justice for Goethe's colour theory…will be performed anew and brought to its conclusion’ is added in B.

3
On Will in Nature

A discussion of the corroborations that the author's philosophy has received
from the empirical sciences since its appearance,

by

Arthur Schopenhauer

Τοιαῦτ᾽ ἐμοῦ λόγοισιν ἐξηγουμένου,
Οὐκ ἠξίωσαν οὐδὲ προσβλέψαι τὸ πὰν
᾽Αλλ᾽ ἐκδιδάσκει πάνθ᾽ ὁ γηράσκων χρόνος.
Aeschylus

All of what is said by me
They deem not worthy to look upon.
But the advance of time makes everything clear.
[Aeschylus, Prometheus Bound, 214–15, 981]

[IX] Preface[1]

I have had the pleasure of being able to lay an improving hand on this small work – after nineteen years, and the pleasure has been all the greater since this work is of special importance to my philosophy. For proceeding from the purely empirical, from the observations of unprejudiced scientists who follow the path of their particular science, I immediately arrive here at the core of my metaphysics, indicating the points of contact of this metaphysics with the natural sciences, and thus providing, as it were, an arithmetic proof[a] of my fundamental dogma, which in this way is grounded more specifically and in more detail, just as it is understood more clearly, more comprehensibly, and more precisely than anywhere else.

The improvements given in this new edition are almost all additions, since almost nothing worth mentioning has been left out of the first edition; in contrast, numerous and in some instances important additions have been inserted.

But even in a general sense it is a good sign that the book trade has demanded a new edition of this work, since it indicates general interest in serious philosophy [X] and confirms that the need for actual progress in philosophy is becoming felt more pressingly than ever at present. But this is based on two circumstances. It is based first on the unparalleled, zealous undertaking of all the branches of the natural sciences, which, being for the most part handled by people who have learned nothing else, threatens to lead to a crass and stupid materialism of which the *primary* offence is not the moral bestiality of the ultimate results, but the incredible ignorance of first principles, since even the life force[b] is denied and organic nature is degraded to a chance play of chemical forces.[*,2] Such men of the crucible and retort must be taught that mere chemistry qualifies one as an apothecary, but not as a philosopher, and no less must certain other scientists of like mind be taught that one can be a consummate zoologist and be able to rattle off all sixty species of monkeys, and yet, if one has learned nothing more than, perhaps, his catechism, taken on the whole he is an ignoramus, to be counted among the rabble. But nowadays this is frequently the case. For people who have learned their chemistry, or physics, or mineralogy, or zoology, or physiology, but nothing else about the world, pose as those who enlighten the world, bringing to this their only other knowledge, namely, what they still retain from the lessons of the catechism from their school years, and if these [XI] two pieces cannot be fitted together, they immediately become scornful of religion and ultimately unsavoury and insipid materialists.[**,3] Perhaps they once heard in school that there was a Plato and Aristotle, a Locke and even a Kant; however, since these people handled neither crucible nor retort, nor stuffed monkeys, they were not considered to be worth any closer acquaintance; rather, calmly throwing the intellectual labour of two millennia out of the window, these scientists philosophize for the public from their own rich intellectual means – on the one hand, on the basis of the catechism, and on the other, on that of the crucible and retort or the taxonomy of monkeys. They need the straightforward lesson that they are ignoramuses, who still have much to learn before they can join the conversation. And in general, anyone who dogmatizes all day with such childishly naïve realism about the soul, God, the beginning of the world, atoms, etc. – as if the *Critique of Pure Reason* had been written on the moon and no copy of it had fallen to earth – belongs just to the rabble: send him to the servants' quarters, where his wisdom will find a buyer.[***,4]

Despite all hypocritical disguises and outward conformity to the church, the other circumstance calling for real progress in philosophy is the disbelief[a] which is gaining the upper hand and which necessarily and inevitably goes hand in hand with all kinds of ever-expanding [XII] empirical and historical knowledge. This disbelief threatens to reject not only the form of Christianity, but also the spirit and sense of Christianity (which extend much farther than Christianity itself) and to deliver humankind to *moral* materialism, which is much more dangerous than the chemical materialism mentioned above. Nothing is more effective at promoting this disbelief than the obligatory Tartuffianism that now appears everywhere so impudently, whose clumsy disciples, clutching their gratuities in their hands, unctuously and urgently preach so that their voices intrude on the critical and scholarly journals published by academies and universities and on physiological as well as philosophical books, where, being completely out of place, they harm their own cause by rousing indignation.[*,5] So under these circumstances it is pleasing to see the public show interest in philosophy.

Nevertheless I have some depressing news for philosophy professors. Their Caspar Hauser (according to Dorguth[b]), whom for nearly forty years they so carefully shut off from light and air, so securely walled up that no sound could betray his existence to the world – their Caspar Hauser has escaped! has escaped and is on the loose – Some even believe he is a prince. – Or to speak more prosaically: that which they fear most of all, that which, with united strength and rare resoluteness, they have been lucky to ward off for more than a generation through such deep silence, such unified ignoring and secreting[c] as has never before been – this misfortune, however, [XIII] has occurred: people are beginning to read me – and will never again stop doing so. 'I am read and I will be read':[d] it cannot be otherwise. This is really bad and most inconvenient; indeed, it is a positive fatality, if not really a calamity. Is this the reward for so much faithful and cosy silence? for sticking together so firmly, in such unity? pitiable civil servants! What happened to Horace's promise:

> 'Faithful silence will receive certain
> reward' – ?[e]

Still, they have really not been lacking in faithful silence;[a] rather, whenever they sense merit, this is exactly their strength, and against such merit it is actually their most subtle trick; for what no one knows is as if it never were. But as to reward,[b] it now appears somewhat doubtful whether this remains so completely certain[c] – it would be so if reward[d] were interpreted in the *negative* sense, which, of course, can also be verified on good classical authority. These men had quite correctly seen that the only means useful against my writings would be to conceal them from the public by means of a profound silence beneath an uproar with the birth of every deformed child of philosophy professors – just as once the Corybants made the voice of the newborn Zeus inaudible by loud clamour and uproar.[e] But this means is exhausted, and the secret is out: the public has discovered me. The fury of the philosophy professors about this is great, but impotent, since their only effective means, applied for so long with success, is exhausted; henceforth, no yapping at me can check my effectiveness, and in vain does one take this stand and the other take another. Certainly, they have made it the case that the generation actually contemporary [XIV] with my philosophy went to its grave without taking any notice of it. But it was merely a delay: as always time has kept its word.

There are two reasons why these men of the 'philosophical trade' (they themselves have the incredible naïveté to call it such[*]) detest my philosophy so much. First, because my works have ruined the public's taste – the taste for empty webs of verbiage; for heaped up mountains of vacuous words; for hollow, insipid, and tedious, torturous twaddle; for Christian dogmatics, appearing in disguise, dressed up as the most wearisome metaphysics; and for systematic, vulgar philistinism, presented as ethics, even with instructions for playing cards and dancing – in short, for the whole method of spinning-wheel philosophy that has already frightened many away from all philosophy forever.

The second reason is that these men of the 'philosophical trade' dare not by any means admit my philosophy, and thus neither can they make use of it for the benefit of the 'trade' – which they even sincerely regret since my wealth would admirably help with their bitter poverty. But my philosophy cannot find favour in their eyes, never at any time, not even if it contained the greatest treasures of human wisdom ever discovered. For it lacks all speculative theology, including rational psychology, and these – exactly these – are the breath of life for these men, the indispensable condition[a] of their existence. Above all in heaven and on earth they want their positions; and their positions require, above all in heaven and on earth, speculative theology and rational psychology: 'apart from this no salvation can be found.'[b] There must and will be theology, from wherever it comes. Moses and the prophets must be upheld as right: this [XV] is the supreme principle of philosophy, and thus, too, rational psychology, as is fitting. But now this kind of thing is not to be had from either *Kant* or me. Indeed, as is well known, the most cogent theological arguments are shattered by his critique of all speculative theology, like a glass thrown against the wall, and by his hands not a splinter of rational psychology remains. And now, even with me, the one who fearlessly continues his philosophy, neither speculative theology nor rational psychology, as is consistent and honest.[*],[6] Conversely, the task of university philosophy[c] is basically to set forth the fundamental truths of the catechism under a mask of abstract, abstruse, and difficult formulas and phrases, torturously tedious as a result; these truths are always revealed to be the core of the matter, no matter how intricate, colourful, unfamiliar, and bizarre they may appear at first glance. This undertaking may have its uses, even if I do not acknowledge it. I only know this much: that in philosophy, i.e., in the search for the truth (I mean the truth *par excellence*,[d] by which are understood the highest, most important disclosures, lying closer to the heart of the human race than everything in the world) one will never advance, not even an inch, by means of such activities; rather, the course of this search is impeded, for which reason I have long recognized in university philosophy the antagonist of genuine philosophy. Now if, in such circumstances, there once appears a philosophy meant honestly and directed in all seriousness to the truth, and nothing but the truth, would not these men of the 'philosophical trade' [XVI] feel like theatrical knights in paper armour when suddenly there appears among them one in real armour, under whose heavy tread the light stage floor boards shake? Thus such a philosophy *must* be bad and false, and it immediately puts the men of 'the trade' into the painful role of those who, in order to appear to be what they are not, must not allow others to appear as they are. Now, however, from all this the most amusing play develops, a play which we enjoy when, after forty years, these men (since unfortunately their ignoring is now at an end) begin to measure me by their puny standards, as if, because of their positions, they were fully competent to pass judgement on me from the heights of their wisdom, when in fact they are most entertaining when they want to act toward me as if they were respectable persons.[a]

Kant is despised by them not much less than I am, albeit even more silently, because he has undermined the deepest foundations of speculative theology, as well as rational psychology, these men's bread winnings;[b] indeed, among all who understand in earnest, he has brought them to irretrievable ruin. Should these men not despise him? he who has made the 'philosophical trade' so difficult that they can scarcely see how they can proceed honourably. Therefore, we are both bad, and these men take absolutely no notice of us. For nearly forty years they have not thought me worthy of one glance, and now from the heights of their wisdom they look down on *Kant* with pity, smiling at his errors. This is very sensible policy and quite profitable. For, completely at ease, as if the *Critique of Pure Reason* were nowhere to be found, they speak volumes about God and the soul, as if about well-known personalities, particularly intimate to them, and they profoundly and learnedly discuss the relation of the former to the world and of the latter to the body. First just toss the *Critique of Pure Reason* [XVII] aside, and then everything will go splendidly. To this end, they have sought for many years gently and gradually to push *Kant* aside, to make him antiquated; indeed, they wrinkle up their noses at him, and, one encouraging the other, are now becoming ever bolder at it.[*,7] They do not have to fear any opposition from in their midst; in fact, they all have the same goal, the same mission, and they make up a huge society whose ingenious members 'in public'[c,8] bow subserviently to one another on all sides and from all quarters. So bit by bit it has come to the point that the most miserable scribblers of compendia becomes so audacious as to treat Kant's great and immortal discoveries as antiquated errors; indeed, they set these aside with the most ridiculous complacency[d] and the most unabashed decrees, which they nonetheless express in the tone of argumentation, trusting that they have before them a gullible public that knows nothing about the subject.[*] And this is done to *Kant* by writers whose complete incapacity is obvious from every page, one might say from every line, of their deafening, mindless bombast. If this were to continue, soon *Kant* would present the spectacle of the dead lion being kicked by an ass. Even in France there is no lack of comrades who, inspired by the same orthodoxy, work toward the same goal: in particular in a talk given before the *Académie des Sciences Morales* in April 1850, one Mr Barthélemy de St Hilaire is so audacious as to judge *Kant* [XVIII] from above and to speak of him in the most disgraceful way, but fortunately, in such a way that everyone an immediately see what is behind it.[**,9]

Now still others from our German 'philosophical trade', in their own efforts to shake off *Kant*, who is so opposed to their goals, set out never to polemicize directly against his philosophy, but to seek to undermine the foundations on which it is built; yet in this they are so completely forsaken by all gods and all power of judgement that they attack *a priori* truths, i.e., truths that are as old as human understanding, truths that constitute the understanding itself, truths which one cannot oppose without declaring war against the understanding. The boldness of these men is just that great. Unfortunately, I am familiar with three of them,[***] and I fear that there are still others who work at this undermining, having the incredible arrogance to maintain that *space* arises *a posteriori* as a consequence of a mere relation of objects *in it*, since they assert that space and time are of empirical [XIX] origin and inherent in bodies – so that first of all, space arises through our perception of the juxtaposition[a] of bodies in space, and in the same way time arises through the succession[a] of alterations (*Sancta simplicitas!,*[b] as if for us the words ‘juxtaposition’ and ‘succession’ could have some sense without antecedent intuitions of space and time imparting meaning to them).[*,10] Then they assert as a result that if there were no bodies, then neither would there be space; and that, were the former to disappear, then the latter must cease to be; and likewise, that were all alterations to stop, time would come to a standstill.[**,11]

And fifty years after Kant's death such nonsense is seriously proposed. But in fact undermining Kantian philosophy is the goal, and, of course, if any of these men's propositions were true, it would be toppled with *one* blow. Fortunately, however, they are assertions of the type that are never answered by refutation, but by derision, namely assertions which are a question not of heresy against Kantian philosophy, but of heresy against common sense, and here occur not as an attack on some philosophical dogma so much as an attack on an *a priori* truth, that as such, comprises human understanding itself, and thus an attack on anyone in his right mind, to whom this truth must be instantly evident, just as 2 × 2 = 4. Fetch a [XX] farmer from his plough, make the question intelligible to him, and he will tell you that if all things on heaven and earth were to disappear, space would still remain, and that if all alterations on heaven and earth were to stop, time would still go on. Compared to these German philosophasters, the estimable French physicist *Pouillet* stands out as one who does not concern himself with metaphysics; however, in his well-known textbook on physics, the basis of public instruction in France, he does not fail to incorporate right in the first chapter two detailed sections, one ‘on space’ and another ‘on time’,[c] wherein he demonstrates that if all matter were annihilated, space would still remain, as it is infinite; and that if all alterations were to stop, time would take its course, without end. Now in this he does not appeal to experience, as he does everywhere else, because it is impossible, yet he speaks with apodictic certainty. It never occurs to him, as a physicist whose science is absolutely immanent, i.e., limited to empirically given reality,[a] to ask how he knows all this. This did occur to *Kant*, and it was precisely this problem, dressed in the strict form of the question concerning the possibility of synthetic *a priori* judgements, which became the starting point and cornerstone of his immortal discoveries and so of transcendental philosophy, which in answering this and related questions demonstrates the nature of empirical reality itself.[*],[12]

[XXI] And seventy years after the appearance of the *Critique of Pure Reason*, and after its worldwide fame, these men dare to dish up such crass absurdities, disposed of long ago, and to revert to brutish old ideas. If *Kant* were now to return and were to see such mischief, he would have to feel as Moses did when he returned from Mount Sinai to find his people dancing before the golden calf; whereupon he smashed the tablets in anger. But if he wanted to take it in a tragic way, I would comfort him with the words of Jesus Sirach, 'he who talks to a fool, talks to one asleep; when the talk is over, he will ask, "What's up?"'[a] For to these men it is as if the 'Transcendental Aesthetic', this diamond in Kant's crown, had absolutely never been; it is tacitly set aside as if nothing had occurred.[b] Then why do they think that nature brought into existence its rarest [XXII] work, a great mind, one out of so many hundreds of millions, if it should be at the discretion of ordinary minds to annul the most important teachings of this great mind by merely asserting the opposite, or even by disregarding these teachings without further as, acting as if nothing had happened?

But this condition of barbarism and brutishness in philosophy, such that now everyone prattles on at random about things that have engaged the greatest minds, is just a result of the fact that, with the help of philosophy professors, that shameless nonsense-monger Hegel has the audacity to promote the most monstrous notions, and thus, for thirty years, has been able to pass in Germany as the greatest of all philosophers. So everyone thinks that he may just confidently dish up whatever runs through his little bird brain.

So, as has been said, the men of the 'philosophical trade' are concerned above all to obliterate *Kant's* philosophy, in order to return to the mud-choked canal of the old dogmatism, and all day long to merrily spin tales about their well-known favourite material, which had been recommended to them, as if nothing had happened and there had never been a *Kant* anywhere, nor critical philosophy.[*,13] Therefore, this was the origin of the affected veneration and commendation, for years proclaimed everywhere, for *Leibniz*, whom they happily make equal with *Kant*, and even elevate over him, being bold enough in the process to call Leibniz the greatest of all German philosophers. But *compared to Kant* Leibniz is a pitifully small light. *Kant* is a great mind, to whom humanity [XXIII] is indebted for never-to-be-forgotten truths, and among his merits also belongs the fact that he has delivered the world forever from *Leibniz* and his lies, from pre-established harmonies, monads, and identity of indiscernibles.[a] *Kant* introduced seriousness[b] into philosophy, and I continue it. That these men think otherwise is easy to explain; indeed, *Leibniz* has a central monad and a *Theodicy*, too, with which to prop them up! This is just the thing for my men of the 'philosophical trade'; with it one can still exist and make an honest living. In contrast, such a thing as Kant's 'critique of all speculative theology' makes their hair stand on end. Thus *Kant* is wrong-headed[c] and is shoved aside. Long live Leibniz! long live the philosophical trade! long live spinning-wheel philosophy! These men actually suppose that by the measure of their own petty purposes[d] they can obscure what is good, topple what is great, bring credit to what is false. Probably for a while, but actually not for long, nor with impunity. Still even I have prevailed in the end, despite their machinations and their malicious forty years of ignoring me, during which time I have come to understand *Chamfort's* maxim: 'Seeing how idiots act in concert against intelligent people, one might believe one sees servants who have conspired to overthrow their masters.'[e]

With those whom one does not like, one has little to do. As a result of this antipathy toward *Kant*, there is thus an incredible ignorance of his theories; occasionally I encounter such proof of this ignorance that I cannot believe my eyes. So I must verify this by a few examples. First a real specimen, although it is already a few years old. In *Anthropology and Psychology*,[f] by Professor Michelet, p. 444, *Kant's* categorical imperative is given in these words, 'you ought because you can'.[g] This is no slip of the pen, for in his [XXIV] *History of the Development of Contemporary German Philosophy*,[h] published three years later, he stated it in just the same way. Thus, apart from the fact that he appears to have conducted his study of

Kantian philosophy through Schiller's epigrams;[i] he has turned the matter on its head, expressing the opposite of the famous Kantian argument, apparently lacking the faintest notion[a] of what Kant had wanted to say with his postulate of freedom on the basis[b] of his categorical imperative. I do not know if one of Michelet's colleagues has taken him to task for this matter;[*],[14] rather 'we ask this allowance and grant it in turn'.[c] – And just one more, really recent instance of this. In his review of Ørsted's book (mentioned above in the note, for the title of which ours unfortunately acts as godfather) the reviewer bumps into the proposition 'that bodies are force-filled spaces', which is new to him; having no notion that what is before him is a world-renowned doctrine of Kant's, he regards this as Ørsted's own, paradoxical opinion, and accordingly, in two reviews, separated by three years, he boldly, persistently, and repeatedly polemicizes against it with such arguments as, 'force can never fill space without some sort of substance,[d] without matter', and three years later, 'force in space does not yet make anything; there must be substance, matter, so that force could fill space…Such filling, however, is impossible without substance. [XXV] A mere force will never fill. There must be matter so that it may fill.' – Bravo! so would my cobbler argue, too.[**],[15] – When I see such specimens of erudition,[e] I come to doubt whether I have not done the man an injustice by including him among those who strive to undermine *Kant*; certainly in doing so I had in view that he says 'space is only the relation of things in juxtaposition': cf. p. 899, and further, p. 908: 'space is a relation in which things stand, things in juxtaposition. This juxtaposition ceases to be a concept when the concept of matter ceases.' For in fact he could have written down any case these propositions in sheer innocence in the end because the 'Transcendental Aesthetic' was as unfamiliar to him as was *The Metaphysical Foundations of Natural Science.* Of course that would be somewhat shocking for a professor of philosophy. But nowadays one must be prepared for anything. For knowledge of critical philosophy has died out, in spite of the fact that it is the last real philosophy that has appeared, and furthermore a theory that constituted a revolution and an epoch in all philosophizing, indeed in human knowledge and thought as a whole. Since all earlier systems were overthrown by this, and since knowledge of it [XXVI] has died out, it is the case that for the most part philosophizing no longer proceeds on the basis of any of the theories of any of the preeminent minds of the past, but is purely random prattle, based on everyday education and the catechism. However, perhaps stunned by me, the professors will once again take up Kant's works. Yet, *Lichtenberg* says 'I believe that after a certain age one can no more learn Kantian philosophy than tightrope walking'.[a]

I would actually not have condescended to enumerate the sins of these sinners, but I must do so, because I am obliged in the interest of truth on earth to indicate the state of depravity in which, fifty years after *Kant's* death, German philosophy finds itself as a result of efforts of the men of the 'philosophical trade', and because I am obliged to indicate what the result would be if these small minds, dedicated to nothing but their own purposes,[b] were left undisturbed to curb the influence of the great geniuses who enlighten the world. Thus I cannot be silent; moreover, this is a case to which Goethe's appeal applies:

> You who are strong, be not so still
> Even if others are shy;
> Whoever will scare the devil,
> Must loudly cry.[c]
>
> Dr Luther thought so, too.

Hatred of Kant, hatred of me, hatred of the truth, although all 'for the greater glory of God',[d] inspire those who live off philosophy. Who cannot see that university philosophy has become the antagonist of all that is truly and seriously meant, the progress of which university philosophy feels obliged to oppose. For a philosophy that deserves the name is purely in service of the truth; hence, it is the supreme aspiration of humanity, but not suitable as a trade. [XXVII] Least of all can philosophy have its position at the universities, where the theology faculty is on top, settling the matter for all time before philosophy arrives. It was different with scholasticism, from which university philosophy descended. This scholasticism was acknowledged to be the handmaiden of theology,[a] and then the term fitted the situation. In contrast, current university philosophy denies that this is the case and professes independent investigation; however, it is merely a veiled handmaiden,[b] just as determined as scholasticism to serve theology. But because of this, serious and right-minded philosophy has in university philosophy an alleged assistant, but actually an antagonist. Therefore I said long ago[*] that nothing could be more beneficial for philosophy than that it cease to be a university discipline, and if I then allowed that, along with logic, which absolutely belongs at the university, at most a short, succinct course in the history of philosophy could also be given, then I have rescinded this premature concession because of the publication that a full professor[c] (a writer of thick volumes on the history of philosophy) has given us in the *Göttingen Scholarly Review*[d] of 1 January 1853, p. 8: 'It could not be mistaken that Kant's theory is traditional theism and has contributed little or nothing to a transformation of widely-held opinions on God and his relation to the world.' – If this is so, then it is my opinion that the universities are no longer the appropriate place even for the history of philosophy. There unconstrained purpose[e] reigns. Certainly I had long ago suspected that in the universities the history of philosophy would be taught in the same spirit and with the same grain of salt[f] as philosophy itself; it needed only a nudge [XXVIII] to make it clear to me. Therefore it is my desire to see philosophy, along with its history, disappear from the catalogue of lectures, for I would like to know that philosophy has been saved from the hands of the privy councillors.[g] In this it is in no way my intention to take professors of philosophy away from their profitable activities at the university. On the contrary, I would like to see them raised by three ranks of honour and placed in the highest faculty, as professors of theology. Basically, they have been this for a long time and have now served long enough as volunteers.

In the meanwhile, I give to youth the honourable and well-intended advice not to waste time with professorial philosophy;[a] but instead to study Kant's works and also those by me. There they will find something solid to learn (that I promise them), and light and order will come to their minds, as far as their minds are able to take it in. It is not useful to collect around a flickering candle in the night, while brilliant torches are at their disposal; still less, however, should one chase after will-o'-the-wisps.[b] In particular, my truth-seeking young students, do not let privy councillors tell you what is in the *Critique of Pure Reason*; rather, read it yourself. There you will find things completely different from what they say is suitable for you to know. – Generally, today, too much study is devoted to the history of philosophy, when such study, by its very nature suited to putting knowing in place of thinking, is now driven by exactly the intent to make philosophy itself consist of its history. But it is not exactly necessary, indeed not even very fruitful, to gain a superficial half-knowledge of the dogmas of all philosophers going back two-and-a-half millennia; yet, the history of philosophy, even honest history, does not provide any more. [XXIX] One comes to know philosophers only from their own works, not from the distorted image of their theories that is presented by a commonplace mind.[*,16] But it is really necessary for order to be brought to the mind by means of some philosophy and at the same time to learn to observe the world without prejudice. But now, given our era and language, no philosophy is as close to us as the Kantian, and at the same time this is one in comparison to which all earlier philosophies are superficial. Thus it is to be preferred without hesitation. But I am aware that the news of Caspar Hauser's escape has already spread among the philosophy professors, for I see that in all sorts of periodicals some of them have given vent to their feelings with venomous and bitter abuses, whereby they make up for what they lack in wit with lies.[**] However I do not trouble myself about this because I am happy about the cause and enjoy the effect as an illustration of Goethe's verses:

> The Spitz from out our stall
> Will always come with us;
> The loud noise of his barking,
> Just proves that we are riding.[a]

Frankfurt-am-Main, August 1854

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a *Rechnungsprobe*

b *Lebenskraft*

[*] And this imbecility has reached such a degree that in all earnestness it is believed that the key to the mystery of the being and existence of this marvellous and mysterious world could be found in wretched *chemical affinities*! – Truly the foolishness of the alchemists, who sought the

philosopher's stone and merely hoped to create gold, was trivial compared to the foolishness of our *physiological* chemists

** ‘Either catechism or materialism’ [*Aut catechismus, aut materialismus*] is their motto

*** There they will also meet people who prefer to toss around unfamiliar words they snap up, which they do not understand, just as when, e.g., they like to talk about *idealism* without knowing what it means, and therefore for most part use it instead of spiritualism (which, as realism, is the opposite of idealism) – something one can see 100 times in books and in critical and scholarly journals, as well as similar *quid pro quos*

* It should always be pointed out to them that no one has faith in their faith

a *Unglaube*

b [See Dorguth, *Grundkritik der Dialektik und des Identitätssystems, mit einem Anhänge von Korollarien, Erläuterungen und Kritiken* (Magdeburg: Heinrichshofe, 1849), p. 9]

c *Ignorirens und Sekretirens*

d *Legor et legar*

e *Est et fideli tuta silentio*

Merces, – ? [Horace, *Odes,* III, 2, 25]

* See *Göttingen gelehrte Anzeige* [*Göttingen Scholarly Review*] of 1853, p. 1

a *fidelen Silentium*

b *merces*

c *tuta*

d *merces* [‘reward’ but also ‘punishment’]

e [In Ancient Greece Corybants were dancers who worshipped the Phrygian goddess Cybele with drumming and dancing]

***** For in philosophy nothing is given by revelation; therefore, a philosopher must above all be an unbeliever

a *conditio sine qua non*

b *extra haec non datur salus* [perhaps also ‘apart from this, nothing gives prosperity’]

c *Kathederphilosophie*

d κατ᾽ ἐξοχήν

***** One always says the other is right, and in the end a foolish public feels they really are right

a *Respektpersonen*

b *gagne-pain*

c *coram populo*

d *suffisance*

* I have in mind here particularly Ernst Reinhold's *System of Metaphysics*, 3rd edn, 1854. How it came about that mind-destroying books such as this one go through repeated editions, I have explained in *Parerga* [*and Paralipomena*], Vol. 1, p. 171 [Hübscher *SW* 5, 191ff.]

** However, by Zeus, all such men in France and Germany should be taught that philosophy exists for something other than to play into the hands of priests. Above all, however, we must make them clearly see that we do not have *faith in their faith* – from which follows what we think of them

*** Rosenkranz, *My Reform of the Hegelian Philosophy* [*Meine Reform der Hegelschen Philosophie*], 1852, especially p. 41, in a pompous and authoritative tone: ‘I have expressly said that space and time absolutely could not exist if matter did not exist. Only the ether spread out within itself is real space; only the movement of this ether and the resulting real genesis of everything individual and separate is real time’

L. Noack, *Theology as the Philosophy of Religion* [*Die Theologie als Religionsphilosophie*], 1853, pp. 8–9

von Reichlin-Meldegg, two reviews of *The Soul of Nature* [*Geist in der Natur*] by Ørsted, in the *Heidelberg Journal* [*Heidelberger Jahrbüchern*] of November–December 1850 and May–June 1854

a *Nebeneinander*

* Time is the condition for the *possibility* of being in succession [*Nacheinander-Seyn*], the condition without which succession neither could take place, nor could be understood by us, nor could be denoted [*bezeichnet*] by words. In the same way, space is the condition of the *possibility* of being juxtaposed [*Nebeneinander-Seyn*]. The proof that our minds are predisposed [*in der Anlage unseres Kopfes stecken*] to these conditions is the ‘Transcendental Aesthetic’ [Kant, *Critique of Pure Reason*]

****** To derive space from the bodies in it is somewhat like deriving the salt of the sea from salted herring

a *Nacheinander*

b [literally, ‘Holy simplicity!’ attributed by Zincgref-Weidner, *Apophthegmata*, Amsterdam (1653) 3: 383, to Johann Hus, burning at the stake, as he saw a farmer put another piece of wood on the fire]

c *de l'espace…du temps*

***** In the commentary on the eighth of the definitions which stand at the head of his *Principia* (p. 12), *Newton* quite correctly differentiates absolute, i.e., empty time, from filled, or relative time, and in the same way absolute from relative space. He says (p. 11): ‘I do not define time, space, place, and motion. Yet it is to be noted that the masses (i.e. such philosophy professors as are mentioned here [Schopenhauer's insertion]) conceive these quantities only in relation to things of the senses, and from this certain prejudices arise, for the elimination of which it is necessary to divide the above into absolute and relative quantities, true and apparent, mathematical and empirical.’ Regarding this, he says (p. 12):

> ‘I. Absolute true and mathematical time is that which, in itself and by its nature, without reference to anything external, flows uniformly, and is called by another name, duration; relative, apparent, and empirical time is everywhere perceivable, and the external measure of duration through motion, whether accurate or proximate, is used by the masses, instead of true time; e.g., hour, day, month, year.’

> ‘II. Absolute space exists, by its nature, without reference to anything external, and always remains uniform and immovable; relative space is the measure of absolute space; that is, every variable distance is determined by our senses according to its position in relation to bodies; it is used by the masses instead of immovable space, as when we determine the interval

of space under the ground, in the air, or in the heavens according to its position relative to the earth.'

However, it did not occur to Newton either to ask how these two infinite entities, space and time, which, as he emphasizes here, are not apparent to the senses, are known to us, and are even so precisely known that we know how to give an account of their entire nature and regularity down to the smallest detail.

[Schopenhauer quotes from Newton in Latin: *Tempus, spatium, locum, motum, ut omnibus notissima, non definio. Notandum tamen, quod vulgus quantitates hasce non aliter quam ex relatione ad sensibilia concipiat. Et inde oriuntur praejudicia quaedam, quibus tollendis convenit easdem in absolutas et relativas, veras et apparentes, mathematicas et vulgares distingui.*

I. *Tempus absolutum, verum et mathematicum, in se et natura sua sine relatione ad externum quodvis, aequabiliter fluit, alioque nomine dicitur Duratio: relativum, apparens et vulgare est sensibilis et externa quaevis Durationis per motum mensura* (*seu accurata seu inaequabilis*) *quâ vulgus vice veri temporis utitur; ut Hora, Dies, Mensis, Annus.*

II. *Spatium absolutum, natura sua sine relatione ad externum quodvis, semper manet similare et immobile: relativum est spatii hujus mensura seu dimensio quaelibet mobilis, quae a sensibus nostris per situm suum ad corpora definitur, et a vulgo pro spatio immobili usurpatur: ut dimensio spatii subterranei, aerei vel coelestis definita per situm suum ad terram*]

[a] *Realität*

[*] For Kant discovered the terrible truth that philosophy must be something completely different from *Jewish mythology*

[a] [Jesus Sirach 22: 8–9]

b *non avenue*

a *identitas indiscernibilium*

b *Ernst*

c *ein Queerkopf*

d *kleinlichen Absichten*

e *en examinant la ligue des sots contre les gens d'esprit, on croirait voir une conjuration de valets pour écarter les maîtres* [*Œuvres choisies de Chamfort* (*Selected Works of Chamfort*), Bibliothèque Nationale, Vol. II, p. 44]

f *Anthropologie und Psychologie*

g *du sollst, denn du kannst*

h *Entwickelungsgeschichte der neuesten deutschen Philosophie*

i [Schiller, *Sämmtliche Werke: Historische-Kritische Ausgabe* vol. XI, p. 143, from the ‘Xenien’ 383; Hübscher notes that Schiller states the postulate: ‘nothing further is to be found from the theoretical realm, but the practical rule still applies: you can because you ought (*du kannst denn du sollst*)’]

***** In his essay *about me* in the *Philosophical Journal* [Hermann Ulrici and Immanuel Hermann Fichte, eds., *Journal for Philosophy and Philosophical Critique* (*Zeitschrift für Philosophie und philosophische Kritik*), Vol. 27, Ps. 1 and 2], 1855, 3rd or 4th Pt., *Michelet* broaches the subject of Kant's famous question: ‘how are synthetic *a priori* judgements possible?’, and then he continues ‘the affirmative answer to this question’, etc., through which he proves that he has not the remotest notion of the meaning of the question as one subject to any kind of affirmative or negative answer, but he states '*how is it* that prior to all experience we are able to make apodictic judgements about everything concerning time, space, and causality *as such*?' A passage in the latest years of publication of the Hegelian journal [*Der Gedanke*] provides a commentary on Michelet's *scandalous ignorance*, such as where he says that after Kant posed this question, all philosophers *sought* synthetic *a priori* judgements. Such ignorance of the ABC of philosophy warrants cashiering

****** In the August volume of the *Heidelberg Journals* [*Heidelberger Jahrbücher*] of 1855, p. 579, in presenting philosophers' theories about God, the same reviewer (von Reichlin-Meldegg) says: 'in Kant, God is an unknowable thing in itself.' In his review of Frauenstädt's *Letters* [*on the Schopenhauerian Philosophy* (*Briefe über die Schopenhauer'sche Philosophie*, 1854)], *The Heidelberg Journals* 1855, May or June, he says that there is absolutely no *a priori* knowledge

a *Ahndung* [an archaic form, read as *Ahnung*]

b *Grund*

c *hanc veniam damus, petimusque vicissim* [more correctly *hanc veniam damus, petimusque damusque vicissim,* Horace, *Ars Poetica*, 11]

d *ein Stoffartiges*

e *specimina eruditionis*

a [*Vermischte Schriften*, Göttingen: Dieterichsche Buchhandlung (1844), Vol. 1, p. 107]

b *Absichten*

c [*Zahme Xenien* 1, v. 153ff.]

d *in majorem Dei gloriam*

***** *Parerga and Paralipomena*, Vol. I, pp. 185–7. [Hübscher *SW* 5, 202–8]

a *ancilla theologiae*

b *ancilla*

c *Ordinarius loci* [Schopenhauer is referring to Heinrich Ritter]

d *Göttingischen Gelehrten Anzeigen*

e *Absicht*

f *grano salis*

g *Hofräthe*

***** ‘We ought to judge the matter itself, rather than to understand accurately what different men have thought about it’ [*Potius de rebus ipsis judicare debemus, quam pro magno habere, de hominibus quid quisque senserit scire*], says Augustine (*City of God*, Book 19, ch. 3). – With the current method, however, the philosophical lecture hall becomes a resale shop of old, long neglected and cast off opinions that are dusted off again every six months

****** At this opportunity, I ask the public once and for all not to believe unquestioningly reports about what I was supposed to have said, even when they appear in quotations, but first to look them up in my works; in this way, many lies will be revealed, but only the addition of so-called quotation marks (‘’) can stamp them as downright falsifications

a *Kathederphilosophie*

b *Irrwischen*

a [‘Kläffer’ (‘yelping dog’ but also ‘fault-finder’), in *Parabolisch* (Allegories)]

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[1] Introduction

For the sake of the few who are ahead of their times and have paid attention to my philosophy, I am breaking a seventeen-year silence[*],[17] in order to provide some of the corroboration that my philosophy has received from unbiased empiricists who were unacquainted with it, and whose method,[a] aimed at mere knowledge from experience, allowed them to discover at its end point just what my theory has presented as the metaphysical point[b] from which experience in general is to be explained. This situation is all the more encouraging because it distinguishes my system from all previous systems, all of which, not excepting even the most recent by Kant, still leave a wide gap between their results and experience, and are very far from reaching down immediately to experience and touching it. My metaphysics proves [2] itself to be the only one that actually has a common point of contact with the physical sciences, a point at which they meet it by their own means, so that they actually connect and agree with it; and in fact this is not accomplished by twisting and forcing the empirical sciences to suit the metaphysics, nor by secretly abstracting metaphysics ahead of time from the empirical sciences and then, in Schelling's manner, finding *a priori* what it had learned *a posteriori*; rather, by themselves and without conspiring, both meet at the same point. Therefore, my system does not, like all previous ones, float in the air high above all reality[c] and experience, but descends to this firm ground of actuality[d] where the physical sciences receive the learner in turn.

The empirical corroborations from other source to be cited here, all concern the core and principal point of my theory, its metaphysics proper; that is, they all concern that paradoxical, fundamental truth, the truth that what *Kant* called the *thing in itself* as opposed to mere *appearance*[a] (more definitely called *representation* by me), and considered absolutely unknowable – that this *thing in itself*, I say this substratum[b] of all appearances and hence of all nature, is nothing other than that with which we are immediately acquainted[c] and precisely intimate,[d] that which we find in our innermost selves as *will*; that accordingly, far from being, as all previous philosophers assumed, inseparable from and even a mere result of *cognition*[e] (which is completely secondary and of later origin), this *will* is fundamentally different from and fully independent of cognition and so can even exist and express itself [f] apart from cognition in all of nature, from the animal on down, which really is the case; indeed, that this will, the only thing in itself, the only truly real thing, the only original and metaphysical thing in a world where everything else is only appearance, i.e., mere representation, gives to everything, whatever it may be, the power[g] by means of which it can exist and have effect;[h] that accordingly not only the voluntary actions of animal beings, but also the organic drives of their living bodies, even the form and nature of their bodies, and [3] further the vegetative growth of plants, and finally even in the inorganic realm crystallization and any original force anywhere that manifests itself in physical and chemical appearances – indeed gravity itself – all these in themselves and beyond appearance (which merely means apart from our mind and its representation) are simply identical with what we find in ourselves as *will*, of which we have the most immediate and intimate cognition possible; that furthermore, the particular expressions of this will are set in motion in cognizing, i.e., animal beings, by motives, but no less in the organic life of animals and plants by stimuli, and finally in the inorganic by mere causes in the narrowest sense of the word (this distinction merely concerns appearance); that on the contrary cognition and its substrate, intellect, is a completely different phenomenon from will, merely secondary, accompanying only the higher levels of the objectivation[i] of will, and is not essential to will itself, but is dependent on will's appearance in animal organisms, and thus is physical, not metaphysical, as is will itself; that consequently absence of will can never be inferred from absence of cognition; rather, will can be demonstrated in all appearances of nature that are without cognition, not only vegetable, but inorganic as well; and so, unlike what everyone previously assumed, will is not conditioned by cognition, but cognition by will.

And it is this fundamental truth of my theory, which still sounds so paradoxical, that has received corroboration in all its principal points from the empirical sciences, which avoid all metaphysics as much as possible. These corroborations are compelled just as much by the power of truth, but are most suprising given the direction they come from. Indeed, these corroborations first came to light over the course of years after the appearance of my work, but fully independent of it. Now the fact that it is precisely this fundamental dogma of my theory that has been corroborated is advantageous in two respects: first because this dogma is the principal thought conditioning all remaining aspects of my philosophy, and second because only for it could there be corroborations from sciences foreign to and completely [4] independent of philosophy. For although the seventeen years during which I have been involved with my theory, and constantly occupied with it, have brought countless proofs of other parts of it – the ethical, aesthetic, and dianoiological[a] – these proofs, by their very nature, immediately shift from the ground of actuality, from which they spring, to that of philosophy itself: for this reason these other aspects cannot have the character of external evidence, and because they have been drawn up by me, are not so compelling, so unequivocal, and so cogent as those which concern *metaphysics* proper, which ultimately are provided by its correlate, *physics* (taking the ancients' broad sense of this word). Because it follows its own methods in all of its branches, physics, and thus natural science in general, must ultimately reach a point at which its explanations come to an end: this is precisely the *metaphysical*,[b] which physics only perceives as its boundary, beyond which it cannot extend, but within which it must remain, and then it relinquishes its object to metaphysics. Thus Kant correctly said, 'it is apparent that the original sources of the effects of nature must absolutely be the subject of metaphysics' ('On the true estimation of the vital forces', § 1[c]).[18] So they are want to describe that which is inaccessible and unknown to physics, at which their investigations end, and which their explanations then presuppose as a given, with expressions such as natural forces, vital forces, and formative drive[a], etc. that is to say nothing more than *x*, *y*, *z*. However, when in particularly fortunate cases especially clear sighted and observant investigators in the realm of the natural sciences succeed at casting a stolen glance beyond the curtain that, as it were, fixes the limits of their science, not just sensing the boundary as such, but also in a way perceiving its constitution, and in a way even peering into the realm of metaphysics that lies on the other side of the curtain, and when physics so favoured describes the boundary thus explored precisely and explicitly as that which a metaphysical system, wholly unknown to it at the time and taking its reasons from a completely different realm, has asserted as the true inner essence and ultimate principle [5] of all things (which moreover this metaphysical system recognizes only as appearances, i.e., representations) – then the different kinds of investigators on both sides must truly feel like miners who build two tunnels from two widely distant points to meet one another in the bowels of the earth, and after working in subterranean darkness for a long time on both sides, trusting only the compass and the level, finally experience the joy they longed for on hearing the other side's hammering. For these investigators now recognize that they have reached the point of contact, sought in vain for so long, between physics and metaphysics, which, like heaven and earth, it seemed would never come together; they recognize that the reconciliation of both sciences has been initiated and their point of connection has been found. But the philosophical system that experiences this triumph thereby receives such a strong and sufficient external proof of its truth and accuracy, that no greater proof is possible. In comparison with such a corroboration, which can count as an arithmetic proof, the sympathy or antipathy of an era is of no account, least of all when one considers to what end such sympathy has, in the mean time, been directed and when one finds it to be – like what has been achieved since Kant. The eyes of the public are gradually beginning to open to the game that for the last forty years has been run in Germany under the name of philosophy, and it will continue to be the case: the time of reckoning has arrived, and it will be seen whether any truth has been brought to light by the endless scribbling and squabbling since Kant. This exempts me from the requirement of discussing unworthy subjects here, especially since what my purpose requires can be produced more briefly and more pleasantly through an anecdote: when, at a carnival, Dante became lost in the crowd of maskers and the Duke of Medici ordered him to be found, those ordered to do so doubted the possibility of finding him, since he was also masked; for this reason, the Duke gave them a question to ask any masker in any way resembling Dante. The question was, ‘Who knows the good’? After they had received many foolish answers to the question, finally a masker gave this: ‘Whoever knows the bad.’ At that [6] , they recognized Dante.* This is as much as to say that I have found no cause for allowing myself to be discouraged by the lack of my contemporaries’ sympathy because at the same time I could see what their sympathy was directed at. Who these individuals were, posterity will realize from their works, but who their contemporaries were, posterity will realize only from the reception of their works. My theory makes absolutely no claim to the name of 'philosophy of the present time', the right to which has been claimed by the very amusing adepts of Hegelian mystification, but it does claim to be the philosophy of times to come, the times in which pleasure is no longer found in senseless verbosity, empty phrases, and playful parallelisms, but which instead will demand of philosophy real content and serious conclusions, and will also exempt it from the unjust and absurd demand that it paraphrase the current religion of the country. 'For it is quite absurd to expect enlightenment from reason and yet to prescribe to it in advance on which side it must come out' (Kant, *Critique of Pure Reason* p. 775, 5th edition).[a] – It is sad to live in times so degenerate that such a self-evident truth must first be verified on the authority of a great man. But it is ridiculous to expect great things of a philosophy that is shackled, and it is extremely entertaining to see when it sets about the task in all solemn seriousness when everyone knows in advance the short meaning of the long speech.[b] However, most of those who are more clear sighted will have discerned theology cloaked under the mantle of philosophy, calling the tune and in its own way instructing students thirsty for the truth – which reminds us of a favourite scene of the great poet. However, others, whose glance will be more profoundly penetrating, assert that what is hidden under this mantle is no more theology than philosophy, but merely a poor wretch, who, while he pretends with solemn mien and profound seriousness to seek the exalted, elevated [7] truth, in fact seeks nothing more than a crust of bread for himself and his future young family, which he could certainly achieve in another way with less effort and more honour; meanwhile, at this price he is willing to do what is required, and if necessary even to deduce *a priori* the devil and his grandmother, in fact, if it must be, by intellectual intuition – here, of course, the high comic effect is to a great extent achieved by the contrast between the loftiness of the alleged aim and the degeneracy of the actual one; nevertheless, it is still desirable that the pure, sacred ground of philosophy be purged of such tradespeople just as of old the temple of Jerusalem was purged of merchants and money-changers. But until that better time has arrived, let the philosophical public direct its attention and sympathy as before. Also as before, alongside Kant – this great mind that nature achieved only once, that illuminated its own depths – let Fichte henceforth always, obligatorily, be called just such a mind without even *one* voice crying out in the midst, 'Hercules and his ape'![a] – and as before, let Hegel's philosophy of absolute nonsense (3/4 cash and 1/4 crazy notions) henceforth be called unfathomably deep wisdom, without there being added, as a motto on his writings, Shakespeare's words 'such stuff as madmen tongue and brain not',[*] or without there being added, as a crest, a cuttlefish, creating around itself a cloud of darkness so that no one can see what it is, with the caption 'protected by my obscurity'.[b] – Finally, as before, let each new day bring new systems, put together purely out of words and phrases, for use at the universities, along with a scholarly jargon that can be used for days without saying a thing, and let this pleasure never be destroyed by the Arab saying: 'I hear the clanking of the mill, but I do not see the meal.' – For all this is appropriate to the time just now and must run its course, just as in every era there was something analogous that, with more or less uproar, occupied the people of the [8] time, and then faded away and disappeared without a trace, so completely that the next generation can no longer say what it was. The truth can wait, for it has a long life ahead. That which is genuine and seriously meant always takes its course slowly, and reaches its goal, indeed almost as if by a miracle: for on its appearance as a rule it is received coldly, indeed, unfavourably, for just the same reasons that afterwards, when it has achieved full recognition and reached future generations, the incalculably great majority of people accept it only on authority, in order not to compromise themselves, while the number of those who value it rightly always remains as few as in the beginning. However, these few manage to hold it in esteem because they themselves are esteemed. Then across the centuries they pass it to one another, hand to hand, over the heads of the incompetent masses. How difficult is the existence of the best inheritance of humanity. – In contrast, if, in order to be true, the truth had to ask permission of those in whose hearts completely different things lie, then its cause would certainly be in doubt, then for it the decree might often be the witches' watchword, 'fair is foul, and foul is fair'.[*] But fortunately it is not so: truth does not depend on any favour or disfavour and needs to ask no one's permission; it stands on its own feet; time is its ally; its power is irresistible, its life indestructible.

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[*] This is what I wrote in the year 1835 as I composed the present book. For I had published nothing since the year 1818, at the close of which *The*

World as Will and Representation had appeared. The 1830 Latin treatment of my essay *On Vision and Colours*, composed for foreigners and incorporated in the 3rd volume of *Scriptores ophthalmologici minores*, edited by J. Radius, cannot be considered breaking the silence, for *On Vision and Colours* was originally published in 1816

a *Weg*

b *das Metaphysische*

c *Realität*

d *Wirklichkeit*

a *Erscheinung*

b *Substrat*

c *Bekannte*

d *Vertraute*

e *Erkenntniß*

f *sich aüßern*

g *Kraft*

h *daseyn und wirken kann*

i *Objektivation*

a *dianoiologischen* [From Greek *dianoia*, understanding, intellect. Schopenhauer uses *Dianoiologie* for 'theory of the understanding' (*Verstandeslehre*). See his most mature discussion of the divisions of philosophy, *Parerga and Paralipomena*, Vol. 2, § 1 (Hübscher *SW* 6, 18–21)]

b *das Metaphysische*

c *Von den wahren Schätzung der lebendigen Kräfte* [*Gedanken von den wahren Schätzung der lebendigen Kräfte und Beurteilung der Beweise derer sich Herr von Leibniz und andere Mechaniker in dieser Streitsache bedient haben, nebst einigen vorhergehenden Betrachtungen welche die Kraft der Körper überhaupt betreffen* (1746)]

a *Bildungstrieb*

***** Baltazar Gracián, *el Criticón* [*The Critic*] III, 9, who may be responsible for the anachronism

a [A747/B775]

b [Schiller, *Die Piccolomini* I, 2,160, 'Was ist dieser langen Rede kurzer Sinn?']

***** [*Cymbeline*, Act V, Scene 4. Schopenhauer quotes the English and provides a German translation as a note]

a Ἡρακλῆς καὶ πίθηκος!

b *mea caligine tutus*

***** [*Macbeth*, Act I, Scene I; Schopenhauer quotes the English and provides a German translation as a note]

[9] Physiology and pathology

Since I classify the empirical corroborations of my theory mentioned above according to the sciences from which they proceed, and thus, as a guide for my discussion, pursue the gradations of nature from highest to lowest, I must first of all speak of a most striking corroboration that my principal dogma has received from the views about physiology and pathology of a veteran of medicine, the physician in ordinary to the King of Denmark, *J. D. Brandis*, whose *Essay on Vital Force* (1795) has already been praised by *Reil*. In his two more recent works, *Experiences in the Application of Cold to Illnesses*, Berlin 1833, and *Nosology and Therapy of Cachexia*, 1834[a], we see him state in the most expressive and striking way that an *unconscious will*[b] is the primary source of all vital functions, derive from this all processes in the drives of an organism, in sickness as in health, and present it as the prime mover[c] of life. I must give evidence of this through literal citations from these works, since only readers of works in medicine would have them at hand.

The first of these two works says, p. VIII: ‘The essence of each living organism consists in the fact that it will as far as possible preserve its own being against the macrocosm.’ – [10] P. X: ‘Only *one* living being, only *one* will, can reside in an organ at the same time; thus, if a diseased *will*, one not in harmony with the whole, is present in the cutaneous organ, then cold is able to suppress the diseased will as long as a generation of warmth, a normal will, can be produced by it.’

P. 1: ‘If we must satisfy ourselves that *a determiner* – a *will* – must have occurred in any vital act through which the formation appropriate to the whole organism is brought about, and any alteration of the form of the parts is conditioned in harmony with the whole individuality and *something to be determined* or something to be formed etc.’ – P. 11: ‘With respect to individual life, it must be possible for that which is to be determined to satisfy the determiner, the organic *will*, if it is to rest content. Even in heightened vital processes occurring in inflammation, something new is formed that expels that which is harmful; until then, more formative material is supplied through the arteries and more venous blood is carried off until the process of inflammation is completed and the organic *will* is satisfied. But this *will* can also become so excited that it cannot be satisfied. This cause of excitement (stimulus) works either immediately on the individual organ (poison, contagion) or it affects the entire living thing, such that this living thing quickly takes the most strenuous efforts in order to get rid of that which is harmful, or to alter the organic *will*, and incites critical vital activities, inflammations, in particular parts or succumbs to the unsatisfied *will*.' – P. 12: 'In this way the anomalous *will* that cannot be satisfied, works destructively on the organism, unless either *a*) the entire living thing, striving toward unity (tending to adapt means to an end) produces other vital activities requiring satisfaction (*Crises et Lyses*) that suppress this *will* when they bring this to completion, to decisive crises (*Crises completae*), or when they only partially avert *will*, called *crises incompletae*; or *b*) another stimulus (medicine) produces another *will* which suppresses the illness. – If we put this in one and the same category with the *will* [11] that we have become conscious of through representations, and keep in mind that there cannot be any question of more or less distant comparisons, then we are convinced that we have secured the fundamental concept of the *one* life, indivisible and unbounded, which, depending on how it manifests itself in different, more or less endowed and practised organs, can make hair grow on the human body or make the most sublime combinations of representations. We see that the most violent affect – unsatisfied will – can be suppressed by a stronger or weaker stimulation' *etc.*[19] – P. 18: 'External temperature is an occasion on which the determiner – this tendency to restore the organism to unity, this *organic will without representation* – modifies its activity first in the same organ and then in a distant one. – Every expression of life, diseased as well as healthy, is but the manifestation of the organic *will*: *this will determines vegetation*. In a healthy condition in harmony with the unity of the whole. In a diseased condition it is…occasioned, *not to will* in harmony with the unity.'[20] P. 23: 'A sudden application of cold to the skin suppresses its function (chilling), a cold drink suppresses the *organic will* of the organs of digestion and thereby increases that of the skin, and produces perspiration; it is just the same with the diseased *organic will*: cold suppresses rashes' *etc.*[21] – P. 33: 'Fever is the participation of all vital processes in a diseased *will*, and thus in the entire vital process it is the same as inflammation in a single organ: the effort of life to form something determinate in order to satisfy the diseased *will* and to remove that which is harmful. – When this is formed, it is called the crisis or lysis. The first perception of something harmful that occasions the diseased *will* affects the individuality in the same way as something harmful that is apperceived by the senses before we have brought to representation its entire relation to our individuality and the means to remove it. It brings about terror and its consequences, a standstill of the vital process in the parenchyma and ultimately in the part of the parenchyma that is directed to the external world, in [12] the skin and in muscles moving the entire individuality (the external body): shivering, chills, trembling, pains in the limbs, etc. The difference between the two is that in the latter case, that which is harmful immediately or gradually reaches clear representation because it is compared with the individuality by all the senses, which thereby determine its relationship to the individuality, and the means to securing the individuality against it (ignoring, fleeing, repulsing) can be brought to a *conscious will*; in contrast, in the former case, that which is harmful does not reach consciousness, and only life (here the healing power of nature) makes efforts in order to remove the harmful and thereby to satisfy the diseased *will*. This is not to be seen as an analogy; rather, it is the true presentation of the manifestation of life.' – P. 58: 'However, always remember that here the cold works as a powerful means of stimulus to suppress or to moderate the diseased *will*, and instead to arouse a natural *will* to the ordinary production of warmth.' – 22

Similar expressions can be found on almost every page of the book. In the second of his books mentioned above Mr Brandis no longer so thoroughly mixes the explanation in terms of will into his particular discussions, probably out of consideration that it is actually metaphysical; but he retains it entirely; indeed, whenever he brings it up, he expresses it all the more definitely and clearly. Thus in §§ 68ff. he speaks of an '*unconscious will* that is not to be separated from the conscious' and which is the prime mover[a] of all life, plant life as well as animal life, in which the determiner of all vital processes, secretions, etc., is an externalized desire or aversion in all the organs. – § 71: 'All convulsions prove that the manifestation of *will* can take place without a definite faculty of representation.' – § 72: 'We encounter everywhere an original activity not communicated, determined now by the most sublime human free will, now by animal desire and aversion, and again by simple, vegetative needs, that rouses in the unity of the individual several activities in order to manifest itself.' – P. 96: 'A creation, an original [13] uncommunicated activity, manifests itself in every expression of life.'…'The third factor of the individual creation is *will, the life of the individual itself*…The nerves are the directors of this individual creation: by means of them form and mixture are altered according to desires and aversions.' – P. 97: 'The assimilation of foreign matter…makes the blood…is not absorption nor exudation of organic matter…rather, everywhere, the one factor of appearance is the *creative will*, which cannot be reduced to any kind of communicated movement.'

When I wrote this in 1835, I was still naïve enough seriously to believe that Mr Brandis had not been familiar with my work; otherwise, I would[23] not have cited his books here, since these would not then be a corroboration, but only a repetition, application, and extension of my theory on this subject. But I believed with certainty that I could assume that he was not familiar with me because he nowhere cites me, and if he were familiar with me, authorial honesty would have absolutely demanded that he not remain silent about the man from whom he borrowed his primary and fundamental ideas, all the more since he then saw that man suffering an undeserved neglect as his works were universally ignored, a condition which could have been interpreted as favourable to fraud.[24] In addition, to cite me would have been in Mr Brandis' own literary interest, and hence would have been a matter of prudence. For the fundamental theory he put forth is so striking and paradoxical, that his Göttingen reviewer was amazed by it and did not know what he should make of it, and Mr Brandis had neither actually grounded such a theory through demonstration or induction,[a] nor established it in its relation to all of our knowledge of nature; rather, he merely asserted it. I therefore imagined that through this singular ability for divination (which shows outstanding doctors at the bedside of the patient how to recognize and grasp what is correct), he had arrived at this theory without being able to [14] provide a strict and methodical account of the grounds for its truth, which is actually metaphysical, even if he must have immediately seen that it runs quite counter to existing views. Had he known my philosophy, I thought, which presents the same truth to a far greater extent, making it valid for all of nature, establishing it through demonstration and induction, in connection with Kantian theory from which it proceeds merely by thinking it through to its end,[b] how welcome it must have been to him to be able to refer to it and lean on it so as not to stand alone on an unheard of assertion that remains for him only an assertion. These are the reasons why I believed at that time that I could assume it to be a settled fact that Mr Brandis actually had not known my work.

However, since then I have become better acquainted with the German scholars and Copenhagen academics among whom Mr Brandis belonged, and I have become convinced that he knew me very well. I have already presented the reason for this in 1844 in the second volume of *The World as Will and Representation*, ch. 20, p. 263,[a] and since the entire subject is unpleasant, I will not repeat it here, but I will only add that since then I have had from a trustworthy source the assurance that Mr Brandis certainly knew my main work and even owned it, since it was found among his possessions. – The unwarranted obscurity that an author such as I have endured for a long time emboldens such people to appropriate the fundamental ideas of such authors without naming them.[25]

Another medical man took this even farther than Mr Brandis, in that he not only used the ideas, but even the words. Namely Mr *Anton Rosas*, professor in ordinary at the University of Vienna, who in the first volume of his *Manual of Ophthalmology*[b] of 1830 literally copied his whole § 507 from my treatise of 1816*, On Vision and Colours*, specifically from pp. 14–16 of it (2nd edn, p. 10[c]), without citing my work or even noting by some other means that someone other than he was speaking here. This sufficiently explains why he had not taken care to cite my work in his index of 21 works on colour and of 40 works on the [15] physiology of the eye, which he provides in §§ 542 and 567; except this was all the more advisable since without naming me, he also appropriated a great deal more from my treatise. E.g. § 526, what is asserted by ‘one’ just applies to me. His entire § 527 is plagiarized from pp. 59 and 60 (2nd edn, pp. 46 and 47[d]) of my treatise, just not word-for-word. That which in § 535 he introduces as ‘obvious’ without any further note, namely, that yellow is ¾ and violet is ¼ of the activity of the eye, had not been obvious to anyone at that time, until

I had made it ‘obvious’, and even until today it is a truth familiar to few and accepted by even fewer; and so to call it ‘obvious’ without any further note still requires a great deal, among other things that I be dead and buried; until then the serious examination of the matter will have to be deferred because through such an examination it could become really obvious that the genuine distinction between Newton's colour theory and mine consists in the fact that his is false and mine is true, a distinction that would be nothing other than vexing for my contemporaries; therefore, a serious examination of the matter must, wisely and according to ancient custom, be put off for a few years. Mr Rosas did not recognize this policy but, because nowhere was there talk of this matter, believed just like the Copenhagen academic Brandis that he could declare it fair game.[a] It can be seen that northern German and southern German honesty have still not come to a satisfactory understanding. Furthermore the entire content of §§ 538, 539, 540 in Mr Rosas’ book is taken out of my § 13 (2nd edn, § 12[b]), indeed, for the most part is copied literally from it. At one point, however, he feels compelled to cite my treatise: specifically § 531 where he needs an authority for a fact. It is amusing how he even introduces the numerical fractions in which, as a result of my theory, I express all the colours. To appropriate this without further ado[c] may have seemed to him to be risky, so on p. 308 he says this: ‘If we *wanted* to express the abovementioned relation of colours to white in numbers, and we take white = 1, then the following proportions can be approximately fixed (as Schopenhauer has already done): yellow = ¾, orange = $^{2}/_{3}$, [16] red = ½, green = ½, blue = $^{1}/_{3}$, violet = ¼, black = 0.’ – Now I would still like to know how this could be done casually, without having previously thought out my complete physiological colour theory, to which alone these numbers refer and without which they are abstract numbers without significance; and moreover, how this can be done if someone like Mr Rosas acknowledges Newtonian colour theory, to which these numbers stand in direct contradiction; finally, how it happens that for millennia people can think and write without ever arriving at exactly these fractions as expressions for colours in just this sense, except the two of us, me and Mr Rosas? For his words above indicate that he would have presented it in exactly this way even if I had not by chance ‘already’ done it fourteen years earlier and thereby needlessly anticipated him, and from his words it can be seen that it is just a matter of *wanting*. However, it is only through these numerical fractions that one obtains the secret of colours, the true explanation of their essence and the differences among them. – [26] But I would be happy if plagiarism were the greatest dishonesty that defiles German literature; there is much more – more profoundly pervasive and pernicious – to which plagiarism is related no more than pickpocketing[d] is to a capital crime. I mean that base, despicable spirit, in pursuit of which personal interest is the guiding star (when it should be truth) and intent[a] speaks through the mask of insight.[b] Opportunism and sycophancy are the order of the day; Tartuffian comedies are staged in real life; Capuchin sermons resound from halls consecrated to the sciences; the sacred word 'Enlightenment' becomes a kind of curse; the great men of previous centuries are defamed, Voltaire, Rousseau, Locke, Hume, these heroes, these jewels and benefactors of humanity, whose fame, spread across both hemispheres, can be extolled if only by the fact that whenever and wherever obscurantists[c] appear, these are their bitter enemies – and not without cause. Literary factions and fraternities are formed for the purpose of praise and blame, and now the bad is praised [17] and trumpeted, the good defamed, or as *Goethe* says, '*secreted by a inviolable silence, a type of inquisitional censure in which the Germans have gained proficiency*'. (*Day and Year Books*[d] for 1821.) But the motives and considerations from which all this occurs are of too base a type for me to want to occupy myself with their enumeration. What a great difference there is between the *Edinburgh Review* (written by independent gentlemen[e] for the sake of the subject, which carries with honour the noble motto,[*,27] taken from Publius Syrus: 'The judge is condemned with the absolution of the guilty'[f] and the purposive,[g] fully contrived, desperate, dishonest German literary journals, which for the most part are fabricated for the sake of money by mercenaries, and which should have as motto: 'come near comrade, and praise so that you are praised when you are away.'[h] – Now after 21 years I understand what *Goethe* told me in 1814 in Berka, where I found him reading Staël's book *On the Germans*[i] and in conversation about it said that she exaggerated German honesty, which could mislead foreigners. He laughed and said, 'Yes, certainly: they will not secure their luggage, and they will be ripped off.' But then he added seriously, 'but if one wants to become acquainted with the magnitude of German dishonesty, one must become familiar with German literature'. – Indeed! But among all the dishonesty of German literature, the most disgraceful is the time-serving[j] of pretend philosophers, of real obscurantists. Time-serving: the word, when I use a form equivalent to the English, needs no explanation, and the matter needs no proof, for those who have the cheek to deny it would provide strong evidence of my present topic. *Kant* has taught us to treat a human being only as an end, never as means:[a] he did not believe that he first had to say that philosophy should only be treated as an end, never as a means. Time-serving out of necessity can be excused in any garb, in the cowl and in [18] ermine, but not in the Tribonion, the cloak of the philosopher, for whoever dons this cloak is sworn to the banner of truth, and when it is a matter of service to truth any other consideration, whatever it be, is ignominious treachery. For this reason, Socrates did not avoid the hemlock nor Bruno the stake. The others can be lured away by a piece of bread. Are they so short-sighted that they do not see posterity already close at hand, the history of philosophy sitting alongside, writing with a bronze stylus and firm hand two bitter lines of condemnation in its imperishable book? or does this not trouble them? – certainly 'after me the deluge' may be said out of need; however, 'after me contempt'[b] is not so easily said. Thus I believe that they will say to this judge, 'ah, dear posterity and history of philosophy, you are mistaken if you take us seriously: we certainly are not philosophers, heaven forbid! no, mere philosophy professors, mere civil servants, mere philosophers in jest! it is as if you wanted to drag a theatrical knight, clad in paper armour, into a real tournament.' Then the judge will probably show some consideration, strike out all these names and confer upon them the benefit of perpetual silence.[c]

From this digression, to which I had been carried away eighteen years ago by the sight of time-serving and Tartuffianism (though they did not flourish then as they do today), I return to the aspect of my theory corroborated by Mr Brandis (although he had not developed it himself) in order to add some explanation of it and to connect it with other corroborations it has received from physiology.

The three assumptions that Kant criticized in the 'Transcendental Dialectic' under the name of ideas of reason, and so excluded from his transcendental philosophy, have always hindered profound insight into nature until this great man brought about a complete transformation of philosophy. One such hindrance to the subject we are presently considering was the so-called rational[28] idea of the soul, this metaphysical entity[d] in whose absolute simplicity ‘cognizing’ and ‘willing’ were bound and fused into an eternally inseparable unity. [19] So long as this was present, there could be no philosophical physiology, all the more since real, purely passive matter necessarily had to be posited along with it, as its correlate, as the substance of the body, as a self-existing being, a thing in itself.[29] This rational idea of the soul[30] was thus responsible for the fact that at the beginning of the previous century the famous chemist and physiologist, Georg Ernst *Stahl*[31] had to miss the truth, to which he came quite close, and which he would have reached if in place of ‘rational soul’[a] he could have posited the naked will, which is without cognition and which alone is metaphysical. But under the influence of this idea of reason, he could not teach otherwise than that it was this simple, rational soul that constructs the body and directs and carries out all its inner, organic functions, but in doing so, knows and experiences nothing of all this, although cognition is the fundamental determination and, as it were, the substance of its being. In this there was something absurd, which made the theory absolutely untenable. It was replaced by Haller's irritability and sensibility, which indeed can simply be understood empirically, yet are also two occult qualities,[b] with which explanation comes to an end. The movement of the heart and the bowels was now ascribed to irritability. But the ‘rational soul’[c] remained undisturbed in its honour and dignity as a strange guest in the house of the body where it dwelled in the garret.[32] ‘The truth lies at the bottom of a well’[d] – so Democritus said, and the millennia have repeated it, sighing: but it is no wonder, since its knuckles are rapped as soon as it tries to get out.

The fundamental feature of my theory, putting it in opposition to all that have ever existed, is the total separation of will from cognition, which all philosophers prior to me have seen as inseparable; indeed, philosophers prior to me have seen will as conditioned by cognition and most often have even seen it as a mere function of cognition, the fundamental substance of our intellectual being.[e] [20] This separation, however, this analysis of the I or soul into two heterogenous components, so long taken to be indivisible, is for philosophy what the analysis of water has been for chemistry, even though it will take a while for this separation to be acknowledged. For me, what is eternal and indestructible in humans, what thus also constitutes the principle of life in humans, is not the soul, but, to use an expression from chemistry, the radical of the soul – and this is *will*. The so-called soul is already compounded: it is the union of will with νοῦς, intellect. This intellect is that which is secondary, the *posterius* of the organism, and as a mere brain function, is conditioned by the organism. In contrast, will is primary, is the *prius* of the organism, and the organism is conditioned by it. For will is the very essence in itself that presents itself as one such organic body only through representation (that mere brain function); only by means of the forms of cognition (or brain function) and so only through representation is the body given to each of us as something extended, something with members, something organic, given in no way other than through representation, not immediately in self-consciousness.[33] Just as actions of the body are only individual acts of will imaged[a] in representation, so too their substrate, the form of the body, is its image as a whole;[b] therefore will is the driving force[c] in all organic functions of the body, as well as in its external actions. True physiology, at its best, shows the spiritual[d] in humans (cognition) to be the product of the physical in humans, and *Cabanis* has realized this as no other. But true metaphysics teaches us that the physical is itself merely a product, or rather an appearance, of something spiritual[e] (of the will), indeed, that matter itself is conditioned through representation, in which alone it exists. Intuition and thought will more and more be explained from the organism, but this will never be the case with will; rather, it is the converse: the organism is explained from will, as I show under the next heading.[f,34] Thus I first posit *will* as *thing in itself*, something completely original; second the body as its mere visibility, objectivation;[g] and third, cognition as merely a function of a part of this body. This part itself is will to cognize objectified (having become representation), [21] since will requires cognition for its ends.[35] But now this function again conditions the whole world as representation; hence, it conditions even the body itself insofar as it is an intuitive object; indeed, it conditions matter in general as that which is present only in representation. For, properly considered, an objective world is something absolutely inconceivable without a subject[h] in the consciousness of which it exists.[36] Thus cognition and matter (subject and object) exist only relative to one another and constitute *appearance*. So through my fundamental alteration things stand as never before.

When it works outwardly, has an effect outwardly, directed to a cognized object and so having passed through the medium of cognition – then everyone recognizes *will* as what is active here, and so it receives its name. But it is no less will that is active in the inner processes that precede those external actions as their condition, creating and maintaining organic life and its substrate; and blood circulation, secretion, and digestion are also its work.[37] Simply because will was only recognized when it proceeds from the individual to the external world (which for just this purpose now presents itself as intuition) cognition has been taken as the essential condition of will, as its sole element, indeed, even as the substance of which it consists, and in this the greatest ὕστερον πρότερον[a] that ever has been committed.

Above all, however, one must know how to distinguish will from free choice[b] and understand that the former can exist without the latter, which, of course, presupposes my entire philosophy. Will is called free choice when it is illuminated by cognition, and when motives, representations, are therefore the causes that move it: expressed objectively, this means when the external influence that causes the act is mediated by the *brain*. A *motive*[c] can be defined as an external stimulus, upon whose influence there first arises an *image in the brain*, through the mediation of which will carries out its particular operation, an external action of the body. But now with the human species a concept can take the place of this image, a concept being abstracted from earlier images of this kind by [22] the removal of their differences, and so no longer intuitive, but merely denoted and fixed through words.[38] Because the influence of motives is generally not limited to contact, their effects can measure their power against one another, i.e., permitting a certain choice: for an animal this choice is restricted to the narrow mental horizon of what lies before it in *intuition*; in contrast, for humans choice has the latitude of the wide sphere of what is *conceivable* for them, their concepts. As a result the movements referred to as voluntary[d] are those that do not follow from *causes* in the narrowest sense of the word like those of inorganic bodies, nor from mere *stimuli*[e] like those of plants, but from *motives*.[*] These, however, presuppose *cognition* which is the *medium of motives* through which causality works in this case, its complete necessity otherwise remaining intact. Physiologically the difference between stimulus and motive can be described in this way: a stimulus *immediately* evokes a reaction, since the reaction proceeds from that part on which the stimulus had its effect; in contrast, a motive is a stimulus that must work indirectly through the brain, where an image arises first of all upon the influence of the motive, and this then evokes the resulting reaction, which is now called an act of will and voluntary.[39] The distinction between voluntary and involuntary movements thus concerns not that which is essential and primary, which is will in both, but that which is merely secondary, the evocation of the expression of will, specifically whether this occurs through the guidance of causes proper, or stimuli, or motives, i.e., causes that have passed through cognition. Free choice in the narrowest sense of the word, which I have called elective decision,[a] occurs in human consciousness, which is distinguished from animal consciousness in that it does not merely contain intuitive representations, but also abstract concepts which, independent of time distinctions, work simultaneously and side-by-side, whereby deliberation, i.e., conflict of motives, has become [23] possible; nevertheless, elective decision only consists in the fact that the *most powerful* motive for a given character overcomes other motives and determines the deed, just as one thrust is overpowered by a stronger counter thrust; and here the result always appears with the same necessity as the movement of a stone that has been thrown. All great thinkers of all times are united and decided on this point, and just as certainly the great masses will never see and will never grasp the great truth that the work of our freedom is to be sought not in isolated actions, but in our existence and being itself. I have presented it most clearly in my ‘Prize Essay on the Freedom of the Will’. Accordingly the alleged free choice of indifference[b] as the distinctive mark of movements proceeding from *will*, is completely inadmissible, for it is an assertion of the possibility of effects without causes.

As soon as will is distinguished from free choice and the latter is considered to be a particular form of the former, or mode of its appearance there will be no difficulty in seeing will in events without cognition, too. That all movements of our body, as well as those of vegetative and organic bodies, proceed from *will* is in no way to say that they are voluntary, since that would be to say that they are occasioned by motives; motives, however, are representations, the seat of which is the brain; only the parts that receive nerves from the brain can be moved by it and hence by motives, and this movement alone is called voluntary. In contrast the movement of the organism's inner economy is controlled by *stimuli*, like that of plants, except that the complexity of the animal organism requires an external sensorium for the apprehension[c] of the external world and will's reaction to it, and also requires a *Cerebrum abdominale*, the sympathetic nervous system, in order likewise to direct the reaction of will to internal stimuli. The former can be compared to the Ministry of Foreign Affairs; the latter can be compared to the Ministry of Home Affairs; but will remains the autocrat[a] present everywhere.

The [24] advances in physiology since Haller have put beyond doubt that not only external actions accompanied by consciousness (*functionales animales*), but also the vital processes taking place completely unconsciously (*functiones vitales et naturales*) are throughout under the direction of the *nervous system*, and the difference, with regard to becoming conscious, depends merely on the fact that the former is directed by nerves coming from the brain, but the latter is directed by nerves which do not directly communicate with the primary centre of the nervous system, which is mostly directed externally, but instead communicate with the subordinate, minor centres, the ganglia and their network. These, so to say, preside as governors of the various provinces of the nervous system and guide the inner processes from internal stimuli, as the brain guides the external actions from external motives; they thus sense inner impressions and react in accordance, just as the brain receives representations and decides in reaction to them, except that each of these minor centres is limited to a narrow range of effects. On this depends the particular life[b] of any system, with respect to which *van Helmont* said that each organ, so to speak, has its own I. This explains life's enduring after parts are amputated, as with insects, reptiles, and other lower animals, whose brains do not much predominate over the ganglia of the separate parts; in the same way, after the removal of the brain, many reptiles live for weeks, even months.[40] Now if we know from most reliable experience that in the actions accompanied by consciousness and controlled by the main centre of the nervous system, *will* is the actual agent (which we recognize in our most immediate consciousness and in a completely different way from the way we recognize the external world), then to be sure, we cannot help but assume that the actions that proceed from this very nervous system, but are directed by its subordinate centres and keep the processes of life constantly going, are in all cases expressions of will – especially since we recognize perfectly the reason why they are not accompanied by consciousness like the others: namely because consciousness has its seat in the brain and thus is limited to such parts as have nerves which go to the brain, and in which consciousness also ceases [25] when these nerves are severed. The distinction between conscious and unconscious, and with it the distinction between voluntary and involuntary movement of a limb, is explained perfectly by this, and no reason remains to accept two completely different sources of movement; moreover, 'principles are not to be multiplied beyond necessity'.[a] This is all so obvious that, on impartial reflection, it almost appears absurd from this standpoint to want to make the body the servant of two masters by deriving its actions from two fundamentally different sources and ascribing to will movement of the arms and legs, eyes and lips, throat, tongue, and lungs, the face and stomach muscles, while in contrast having the movement of the heart, the arteries, the peristaltic movement of the intestines, the absorption of the intestinal villae and the glands, and all the movements serving secretions proceed from a completely different, unknown, and eternally secret principle, designated by such names as vitality, archaeus, *spiritus animales*, vital force, formative drive – all of which says no more than *x*.[*],[41]

It is noteworthy and instructive to see how the excellent *Treviranus*, in his book *Appearances and Laws of Organic Life,*[b] Vol. 1, pp. 178–85, troubles himself to find out which of the motions among the lowest animals, infusoria and zoophytes, are voluntary and which are, as he puts it, automatic or physical – i.e. merely vital; the basis here is his assumption [26] that he is concerned with two different original sources of motion, while in truth the one proceeds from will as much as the other, and the entire difference consists in whether they are occasioned by a stimulus (which can again be merely internal or external) or by a motive. Among the many higher animals – crustaceans and even fish – he considers the voluntary and vital movements as wholly collapsed into one (e.g. locomotion and respiration), a clear proof of the identity of their being and origin. – He says on p. 188: 'In the families of actinia, asteria, sea urchins, and holothuriae (*Echinodermata pedata Cuv.*), it is apparent that movement of the fluids depends on the will of these creatures and is a means to locomotion.' – P. 288 says: 'The throat of mammals has on its upper end a pharynx that expands and contracts through muscles that in their formation resemble voluntary muscles, yet without being under the control of will.' –

It can be seen here how the boundaries of those motions proceeding from will and those assumed to be foreign to it blur into one another. – *Ibid*., p. 293: ‘Movements in the stomach chambers of ruminants proceed in such a way that they have all the appearance of the voluntary. However, they are not always limited to a connection with rumination. Even the simple stomach of the human and many animals only allows that which is digestible to pass through its lower orifice, and rejects that which is indigestible by vomiting.’[42]

There is also still particular evidence that movements from stimuli (the involuntary) as well as from motives (the voluntary) proceed from will: to this belong the cases in which the same motion now follows from a stimulus, now from a motive, as, e.g., the constriction of the pupil: it follows from a stimulus with increasing light, and from a motive whenever we strain to observe a small object precisely from very close up, because constriction of the pupil enables the clearest close-up vision, which we can even increase if we look through a hole in a card made with a pin; [27] and conversely we dilate the pupil when we look into the distance.[43] The same movement of the same organ cannot arise alternately from two fundamentally different sources. – In his paper, *Additions to E. H. Weber, Treatise on the Motion of the Iris*[a] (Leipzig, 1823), E. H. Weber explains that he has discovered that merely through free choice he can dilate and constrict the pupil of one eye while the other is closed, so that one and the same object appears first distinct and then indistinct. – Johannes Müller, too, *Manual of Physiology*, p. 764,[b] seeks to prove that will affects the pupil.[44]

The view that the vital and vegetative functions occurring without consciousness have will as their innermost mechanism is further corroborated by the observation that even the conscious, voluntary movement of a limb is just the ultimate result of a great many previous alterations within the limb, which come to consciousness no more than any organic functions and yet are obviously what is first actuated by will and has the motion of the limb merely as a consequence; nevertheless, this remains so unknown to our consciousness that physiologists seek to discover it through hypotheses like these: that sinews and muscle fibres become contracted through an alteration in the cell tissue of the muscle, which is effected by a precipitation to serum of blood vapour contained in the tissue, but this, however, comes about through the influence of the nerve, and this – by will. The alteration first proceeding from will does not come to consciousness, but only its distant result, and even here this actually comes to consciousness only through the brain's spatial intuition, in which this result is presented together with the entire body. But physiologists would never have arrived at the truth that the final element in the ascending causal series is will by way of their experimental research and hypotheses; rather they recognize it in a completely different way: the solution to the riddle is whispered to them from outside their research, through the fortunate circumstance that in this case the researcher is at the same time himself the object of the research, [28] and so experiences the secret of the inner process on this occasion; otherwise his explanation, just like the explanation for any other phenomenon,[a] must come to a stop before an inscrutable power. And conversely, if we had the same internal relation to any natural phenomenon that we have to our own organism, the explanation of any natural phenomenon and all the properties of any body would ultimately be traced back in the same way to a will manifesting itself in them. For the difference lies not in the thing, but in our relation to the thing. Wherever the explanation of the physical comes to an end, it runs into something metaphysical, and wherever this is open to immediate cognition, as here, will reveals itself. – That the parts of an organism that are not moved by the brain upon motives, and not voluntary, nonetheless are animated and ruled by will is confirmed by their sympathy with all unusually violent movements of will, i.e., affects and passions: accelerated pulse with joy or fear, blushing with shame, becoming pale with terror or with concealed anger, crying at sadness, erection from erotic ideas,[45] difficult breathing and increased intestinal activity with great anxiety, salivating at appetizing food, nausea at the sight of disgusting things, strongly heightened blood circulation and even alteration of the quality of bile with anger, and foaming at the mouth with intense rage, the last to the extent that a dog that is angered in the extreme can impart hydrophobia through its bite, without itself being afflicted by rabies or without becoming afflicted by it, which has also been said of cats and enraged cocks.[46] Furthermore incessant grief most profoundly undermines the organism, and terror, as well as sudden joy, can mortally affect it. In contrast, all the inner processes and alterations which only concern cognition and do not involve will, however great and important they may be, remain without influence on the mechanisms of the organism – except that too strenuous and too protracted intellectual activity tires the brain and gradually exhausts and finally undermines the organism, [29] which once again confirms that cognition is of a secondary nature and merely the organic function of a part, a product of life, but does not constitute the inner core of our being, is not the thing in itself, is not metaphysical, incorporeal, eternal, like will, which does not tire, does not alter, does not learn, does not perfect itself through practice, is in childhood as in old age, always one in the same, and its character is unalterable in everyone. Similarly, as that which is essential, it is also the constant[a] and thus exists in animals as in us, for it does not depend, like intellect, on perfection of the organization,[b] but it is essentially the same in all animals and so intimately familiar to us.[47] Hence the animal has all the affects[c] of humans: joy, sadness, fear, anger, love, hate, longing, envy, etc.: the great difference between humans and animals consists only in degrees of perfection of intellect. But this is to digress; therefore, I here refer to *The World as Will and Representation*, Vol. 2, ch. 2, No. 2.[d]

Given the clear grounds presented for the view that the original agent in inner mechanisms of the organism is the very will that directs the external actions of the body, and that will reveals its identity in its passing through consciousness only because here it requires the mediation of cognition directed outwards, we will not be surprised that, in the course of their purely empirical research, other physiologists besides *Brandis* have more or less clearly recognized this truth. In his *Archive for Physiology* (Vol. 5, pp. 195–8), *Meckel* [e] arrives completely empirically and wholly impartially at the conclusion that vegetative life, the formation of the embryo, assimilation of nourishment, the life of plants, may actually be regarded as expressions of will, indeed, that even the striving of a magnet[f] appears to be so. ‘The assumption’, he says, ‘of a certain free will in every vital movement can perhaps be justified.’ – ‘Plants appear to go toward light voluntarily’,[g] etc. – The volume is from 1819, shortly after my work had appeared, and it is at least uncertain whether it had an influence on him or [30] even had been known to him; thus, I also count these remarks among the impartial empirical corroborations of my theory. – *Burdach*, too, in his great *Physiology*,[h] Vol. 1, § 259, p. 388, arrives by completely empirical means at the conclusion that ‘self-love is a force belonging to all things without distinction’; he demonstrates it first in animals, then in plants, and finally in inanimate bodies. But what is self-love other than will to maintain existence, will to life? – Under the heading 'Comparative anatomy', I will cite from the same work a passage that is even more emphatically corroborative of my theory. – That this theory of will as the principle of life is beginning to spread in the broader circle of medicine and is accepted by its younger representatives, I am especially happy to see in the theses that *Dr von Sigriz* has defended on his promotion at Munich in August 1835, which begins thus: 1. 'it is blood that determines the form of an organism and its development.' – 2. 'organic development is determined by the activity of internal life and by *will*.'[a]

Finally we must mention another noteworthy and unexpected corroboration for this part of my theory that *Colebrooke* has communicated in recent times from ancient Hindu philosophy. In his description of the philosophical schools of the Hindus, which he provides in the first volume of *Transactions of the Asiatic Society of Great Britain*, 1824, he cites, p. 110, the following as the teaching of the Nyaga school:[*] 'Will (*volition*, *Yatna*), exertion or expression of will, is a self-determination to action, which gives satisfaction. Desire is its occasion, and perception its motive. We can distinguish two types of perceptible exertion of will: that which originates from desire, which seeks the agreeable, and that which arises from aversion, which shuns the repugnant. Another species, which escapes sensation or perception, but is inferred from analogy [31] of spontaneous acts, comprises animal functions, having for a cause the vital unseen power.'[b] Apparently 'animal functions' is to be understood here not in the physiological but in the popular sense of the word, thus it is indisputable here that organic life is derived from will. – [48] A similar statement by Colebrooke is located in his commentary on the Vedas (*Asiatic Researches*, Vol. 8, p. 426[c]), where it reads: 'Asu is *unconscious volition*, which occasions an act necessary to the support of life, as breathing etc.'[d]

Moreover, my reduction of life force to will is in no way opposed to the ancient division of its functions into reproductive force, irritability, and sensibility. This division remains as a profound distinction and provides occasion for interesting observations.

Reproductive force, objectified[a] in cell tissue, is the principal characteristic of the plant and is the vegetative in humans. If it is excessively predominant in the human, we suspect a phlegmatic, slow, indolent, obtuse temperament (Boeotians), although this supposition is not always confirmed. – *Irritability*, objectified in muscle fibre, is the principal characteristic of animals, and is the animal in humans. If it is excessively predominant in the human, dexterity, strength, and bravery are usually found, thus, a suitability for physical exertion and war (Spartans). Almost all warm-blooded animals, and even the insects, far outstrip the human in irritability. The animal becomes most vividly aware of its existence through irritability, and therefore it exults in the expressions of it. A trace of this exultation still shows itself in humans as dance.[49] – *Sensibility*, objectified in the nerves, is the principal characteristic of humans and is actually that which is human in humans. In this no animal can compare by far [32] with the human. If it is excessively predominant, it yields *genius* (Athenians). Therefore the human being of genius is *human* to a higher degree. This explains why some geniuses have not wanted to recognize ordinary humans, with their monotonous physiognomies and prevailing stamp of the commonplace, as human beings, for in them they did not find their equals, and naturally mistook their own nature for normal. In this sense, Diogenes looked for humans with his lantern; – the genial Koheleth says, 'Among a thousand I have found *one* human being, but no woman among all these'[b] – and Gracián in *The Critic*, perhaps the greatest and most beautiful allegory that has ever been written, says, 'but the most miraculous was that in the whole land, even in the most populated cities, they met no *human beings*; rather, everything was peopled with lions, tigers, leopards, wolves, foxes, apes, oxen, asses, swine – nowhere human beings! Only later did they discover that the few existing humans, in order to protect themselves and not to see what was going on, had withdrawn into that solitude that actually should have been the abode of wild animals' (condensed from *crisi* 5 and 6 of the first part[c]). In fact, for the same reason all geniuses are peculiarly inclined to solitude, to which they are driven as much by their difference from others as the inner wealth with which they are equipped, since among humans, as among diamonds, only the uncommonly great are suited as solitaires: the ordinary ones must be set in clusters to produce any effect.

Even the three *Gunas* or fundamental properties of the Hindus match the three physiological fundamental forces. *Tamas-Guna*, obtuseness, stupidity, corresponds to reproductive force – *Rajas-Guna*, vehemence, to irritability

– and *Sattva-Guna*, wisdom and virtue, to sensibility. However, when it is added that *Tamas-Guna* is the fate of animals, *Rajas-Guna* of humans, and *Sattva-Guna* of the gods, then this is to speak more mythologically than physiologically.

The subject considered under this heading is handled as well in the 20th chapter of the 2nd volume of *The World as Will* [33] *and Representation*, under the heading ‘Objectification of will in the animal organism’, which I recommend rereading as a supplement to what is given here. What is in § 94 of the second volume of *Parerga* is also relevant here.

It may still be noted here that passages cited on pp. 14 and 15[a] above from my essay on colours refer to the first edition of that work, of which a second edition will soon appear and which will have different pagination.

[a] *Versuch über die Lebenskraft…Erfahrungen über die Anwendung der Kälte in Krankheiten…Nosologie und Therapie der Kachexien*

[b] *bewußtlosen Willen*

[c] *primum mobile*

[a] *primum mobile*

[a] *Beweis und Induktion*

[b] *Zu-Ende-denken*

[a] [Hübscher *SW* 3, 295]

[b] *Handbuch der Augenheilkunde*

[c] [Hübscher *SW* 1, 10. See p. 215]

d [Hübscher *SW* 1, 46 and 47. See pp. 246ff.]

a *de bonne prise*

b [Hübscher *SW* 1, § 12. See p. 217]

c *sans façon*

d [Schopenhauer uses the English term]

***** This was written in 1836, since which time the *Edinburgh Review* has declined and is no longer what it was; since then I have even come across clerical wiles directed to the mere rabble

a *Absicht* [sometimes translated as 'purpose']

b *Einsicht*

c *Obskuranten*

d *Tag- und Jahreshefte*

e [Schopenhauer uses the English term]

f *Judex damnatur, cum nocens absolvitur* [*Sententiae*, No. 257]

g *absichtsvollen*

h *accedas socius, laudes, lauderis ut absens* [Horace, *Satires* II, 5, 72]

i *De l'Allemagne* [1813]

j *Zeitdienerei*

a [Paraphrasing a form of Kant's categorical imperative, ‘so act that you use humanity, in your own person as well as in the person of another, always at the same time as an end, never merely as a means.’ *Groundwork of the Metaphysics of Morals*, Ak. 4: 429]

b *après moi le déluge…après moi le mépris*

c *beneficium perpetui silentii*

d *Wesen*

a *anima rationalis*

b *qualitates occultae*

c *anima rationalis*

d [Cf. Democritus in *Diogenes Laertius* IX, 72: ἐν βυθῷ ἡ ἀλήθεια ‘Truth is in the depths.’]

e *geistigen Wesens*

a *die in der Vorstellung sich abbildenden einzelnen Akte des Willens*

b *sein Bild im Ganzen*

c *agens*

d *das Geistige* [alternative translation: ‘the intellectual’]

e *eines Geistigen*

f [see ‘Comparative Anatomy’, p. 351 below]

g *Objektivation*

h *ein Subjekt*

***** In *The Two Fundamental Problems of Ethics* I have presented in detail the differences between cause in the narrowest sense, stimulus, and motive, pp. 30ff. [See *FW*, 52ff. (Hübscher *SW* 4, 29)]

a [*husteron proteron*: a figure of speech in which two temporally or logically sequenced actions are transposed; here, confusing the ground for the consequent]

b *Willkür*

c *Motiv*

d *willkürlich*

e *Reize*

a *Wahlentscheidung*

b *liberum arbitrium indifferentiae*

c *Auffassung*

a *Selbstherrscher*

b *vita propria*

***** Particularly in the case of secretions, we cannot fail to recognize a certain selection of what is suitable to each, consequently a *free choice* of the organs discharging them [*Willkür der sie vollziehenden Organe*], which must even be supported by a certain dull sense impression and by means of which each organ of secretion draws out of the same blood only the secretion appropriate to it and no other, as the liver extracts only bile from the circulating blood, sending on the remaining blood; in the same way the salivary gland and the pancreas draw only saliva, the kidneys only urine, the testicles only sperm, etc. Therefore, the organs of secretion can be compared with different species of cattle, grazing in the same meadow, each of which takes up the plant corresponding to *its* appetite

a *principia praeter necessitatem non sunt multiplicanda* [Schopenhauer alludes to the principle known as ‘Ockham's razor’, commonly put as: ‘entities are not to be multiplied without necessity’ (*‘non sunt multiplicanda entia sine necessitate*’)]

b [*Beiträge zur Aufklärung der*] *Erscheinungen und Gesätze des organischen Lebens* [4 vols., 1835–8]

a *additamenta ad E. H. Weberi tractatum de motu iridis*

b [Johannes Peter Müller, *Handbuch der Physiologie des Menschen* (1833–40)]

a *Erscheinung*

a *das Konstante*

b *Organisation*

c *Affekten*

d [Hübscher *SW* 3, 227–30]

e [Johann Friedrich Meckel, *Deutsches*] *Archiv für Physiologie*

f *das Streben des Magneten*

g *freiwillig*

h [*Physiologie als Erfahrungswissenschaft* (1826–40)]

***** In general, when I cite passages from books in modern languages, I translate them; however, I cite the original, adding the original itself only when my translation could be subject to any doubt

a 1. *Sanguis est determinans formam organismi se evolventis*. – 2. *Evolutio organica determinatur vitae internae actione et voluntate*

b [Schopenhauer also provides the English for the final sentence of this quote. He translates 'sensation' as *Empfindung*; 'perception' as *Wahrnehmung*; 'spontaneous' as *willkürlich*]

c [Calcutta, 1805, London, 1808]

d [Schopenhauer also provides the English sentence, translating 'unconscious volition' as *unbewußtes Wollen*]

a *objectivirt*

b [Ecclesiastes 7:28]

c [Baltazar Gracián, *El criticón* (1651–57)]

a [See pp. 335–6 above]

[34] Comparative anatomy

From my proposition that Kant's ‘thing in itself’, or the ultimate substrate of every appearance, is will, I have not only deduced that will is the agent even in all unconscious functions of the organism, but likewise that this organic body itself is nothing other than will appearing in representation, will itself intuited in the form of cognition of space. Consequently I have said that just as each individual momentary act of will presents itself at once, immediately, and inevitably in the external intuition of the body as an action[a] of it, so every animal's collective willing,[b] the totality[c] of all its strivings, must have its true image[d] in the entire body itself, in the nature of its organism, and there must be the most precise agreement between the ends of its will in general and the means that its organization provides for achieving these ends. Or put briefly: the collective character of its willing must stand in exactly the same relation to the form and nature of its body as the relation between the individual act of will and the individual bodily action that carries it out. – In recent times thoughtful zootomists and physiologists have, for their own part and independent of my theory, recognized this as a fact and accordingly corroborated it *a posteriori*: their statements on this lay out [35] nature's evidence for the truth of my theory.

In the fine copper plate work *On the Skeletons of Predators*[e] by *Pander* and *d’Alton*, 1822, p. 2, we find ‘Just as what is characteristic of the bone structure arises from the *character* of animals, so this develops in turn from their *inclinations and desires*[f]…These *inclinations and desires* of animals, which are *expressed* so *vividly* in their whole organization and of which the organization appears only as a mediating expression, cannot be explained from particular fundamental forces since the inner ground can only be derived from the general life of nature.’ – By this last turn of phrase the author actually affirms that he, like any natural scientist, has here reached the point where he must stop because he bumps up against the metaphysical, and that at this point, however, what is ultimately recognizable, beyond which nature evades his research, is *inclinations and* *desires*, i.e., will. 'The animal is *so*, because it wills *so*', would be the brief expression for his ultimate result.

No less explicit is the evidence that the learned and thoughtful *Burdach* provided for my truth in his great *Physiology*, Vol. 2, § 474, where he deals with the ultimate ground for the formation[a] of the embryo. Unfortunately, I must not conceal the fact that this man, otherwise so excellent, was misled just here, in an hour of weakness – heaven knows how and why – and passes off a few phrases from that completely worthless, powerfully obtrusive pseudo-philosophy about 'thought' being what is original (it is precisely that which is last of all and most conditioned) and yet 'not a representation' (thus a wooden iron). But immediately afterwards, as the influence of his own better self returns, he expresses the pure truth on p. 710: 'the brain evaginates into the retina because the central part of the embryo *wills* to receive impressions of the activity of the world; the mucus membrane of the intestinal canal develops into the lung because the organic body *wills* connection with the elementary substances of the world; the bud of the reproductive organs comes from the vascular system because the individual lives only in the species and the life begun in the individual [36] *wills* to multiply itself.' – *Burdach's* remark, so very consistent with my theory, reminds me of a passage from the ancient *Mahābhārata*, which in this context one cannot help but regard as a mythical expression of the same truth. It is in the third canto of the episode of Sunda and Upasunda in Bopp's *Arjuna's Trip to Indra's Heaven, including Other Episodes of the Mahābhārata*, 1824.[b] There Brahman had created Tilottama, the most beautiful of all women, and she walked around the assembly of gods; Śiva was so ardent to see her, that as she went around the circle successively, four faces arose in him in keeping with her position, and thus with the four directions of the globe. Perhaps this is related to the presentation of Śiva with five heads, as Panchamukha Śiva. In the same way, on the same occasion, arose the innumerable eyes on Indra's entire body.[*,50] – In truth, each organ is to be viewed as an expression of a universal manifestation of will,[a] i.e., one produced for all time, of a fixed longing, of an act of will, not of the individual, but of the species. The form of any animal is a longing of the will to life, called up by the circumstances: e.g. if it is seized by a longing to live in trees, to hang on their branches, to consume their leaves, without ever warring with other animals or ever treading the ground, this longing presents itself, throughout time, in the form (Platonic Idea) of a sloth. It can almost not walk because it is intended for climbing; helpless on the ground, it is agile in trees, and appears like a mossy bough, so that no pursuer will become aware of it. – But let us now consider the matter somewhat more prosaically and methodically.

The [37] obvious suitability of any animal to its way of life, to the external means of its preservation, extending even to particulars, and the overwhelmingly artful perfection of its organization is the richest material for teleological considerations, which the human mind has applied itself to forever, and which, extended even to inanimate nature, became the argument for the physico-theological proof. The purposiveness[b] without exception, the evident intentionality[c] in all parts of the animal organism proclaims that rather than accidental and natural forces operating without plan, a will has been active – and proclaims it so clearly that it could never have been misconstrued in earnest. But as empirical knowledge[d] and opinion[e] would have it, the work of a will could not be thought of except as accompanied by cognition.[f] For prior to me, as has been discussed in the previous chapter, will and cognition[g] were taken to be absolutely inseparable; indeed, will was viewed as a simple operation of cognition, this supposed basis of everything intellectual. Accordingly, where will worked, cognition must have led it; so it must have guided it here too. The medium of cognition, however, which as such is essentially directed outward, implies that a will activated by means of cognition can only work outwardly, that is, only from *one* being on *another*. Therefore will was not sought where undeniable traces of it had been found, but rather it was transferred outwards, and the animal was made the product of a will foreign to it, of a will guided by cognition, and by a cognition which must have been a very clear, well-thought-out concept of a purpose that preceded the animal's existence and must have been situated outside of the animal, together with will, whose product the animal is. Hence the animal would have existed in representation earlier than in reality or in itself. This is the basis of the line of thought on which the physico-theological proof rests. This proof, however, is no simple scholastic sophism, like the ontological proof, and it does not contain in itself an indefatigable, natural opponent (such as the cosmological proof contains) in the same law of causality to which it owes its existence; rather it is really for the [38] scholarly what the ceraunological proof[*] is for the masses,[51] and has such strong plausibility that even minds both most eminent and unprejudiced were thoroughly entangled in it, e.g., Voltaire, who, after having further doubts of all sorts, saw no possibility of escaping it and always returned to it; indeed, he considered its evidence nearly equal to the mathematical. Even *Priestley*, too (*Disquisitions on Matter and Spirit*, sec. 16, p. 188[a]) declares it to be irrefutable.[52] Only *Hume's* discretion and acumen stands the test: in his *Dialogues on Natural Religion* (part 7 and in other passages), which is well worth reading, this genuine forerunner of Kant calls attention to how there is absolutely no fundamental similarity between works of nature and those works of art produced by design. Now *Kant's* merit shines more splendidly in the *Critique of the Power of Judgement* as well as in the *Critique of Pure Reason*, where he has cut through the nerve of the argument[b] for this very fallacious proof as he did the two others. A rather brief *résumé* of this Kantian refutation of the physico-theological proof is found in my principal work, Vol. 1, p. 597.[c] Kant has won great merit in doing this, for nothing is more opposed to correct insight into nature and the essence of things than interpreting these as cleverly calculated works. If, therefore, a Duke of Bridgewater[a] has offered large sums as prizes for the purpose of establishing and perpetuating such fundamental errors, then we, without any other reward than the truth, walking in Hume's and Kant's [39] footsteps, will work fearlessly on their destruction. The truth is worthy of honour – not what stands opposed to it.[53] However, in this case Kant confined himself to the negative, but this only had its full effect when it was supplemented by a true positive, since that alone affords complete satisfaction and drives out error, as is consistent with Spinoza's expression: ‘As light manifests itself and darkness, so truth is the standard of itself and of the false.’[b] Therefore we first of all say that the world is not created with the aid of cognition; hence, it is not created from without, but from within, and then we are concerned to establish the salient point of the world-egg.[c] The physico-theological idea that there must be an intellect that orders and forms nature is just as fundamentally wrong as it is suited to the uneducated understanding. For intellect is only known to us from animal nature, hence, as a completely secondary and subordinate principle in the world, a product of latest origin; therefore, it can never have been the condition of the world's existence, nor can an intelligible world[d] precede the sensible world,[e] since it receives its material solely from the latter. An intellect has not produced nature; rather, nature the intellect.[54] However, will – that which fills everything and immediately reveals itself in all, so that everything indicates itself as appearance of will – appears everywhere as that which is original. Therefore all teleological facts can be explained from the will of the being itself in which they are discovered.[55]

Moreover the physico-theological proof has already been rendered powerless by the empirical observation that the works of the creative drive[f] in animals (the spider's web, the bee's honeycomb, the termite's hill,[56] etc.) are all constituted as if they were the result of a purposeful concept, as if they originated in far-reaching foresight and rational deliberation; whereas they obviously are the work of a blind drive, i.e., of a will not guided by cognition, from which it follows that the inference from such a nature to such a mode of origin is not certain, as with every inference from consequent to ground. A detailed consideration of creative drives is provided in the 27th chapter [40] of the second volume of my principal work,[a] and along with that which is under the previous heading, 'On Teleology', it is to be used as a supplement to the entire discussion which concerns us here.

If we now look somewhat more closely into the above-mentioned suitability of the organization of every animal to its way of life and its means of preserving its own existence, then ultimately the question arises whether the way of life has conformed to the organization or the converse. At first glance the former appears to be more correct since chronologically the organization precedes the way of life, and one would think that the animal would have assumed the way of life best suited to its structure[b] and would have best used the organs it has: the bird flies because it has wings; the bull butts because it has horns, and not the converse. Lucretius is also of this opinion (which is always a doubtful sign for an opinion):

Nothing arises in the body so that we can use it,
But that which arises is the cause of our using it.[c]

on which he expands, IV, pp. 825–43.[57] But with this assumption it remains unexplained just exactly how all the different parts of an animal's organism, taken together, can correspond precisely to the animal's way of life, how no organ interferes with another, and, moreover, how each supports the other – also how none remains unused and how no subordinate organ would be better suited to another way of life, while only the principal organs would have determined the way of life that the animal actually leads; rather, each part of the animal exactly corresponds to any other as well as to the animal's way of life: e.g. claws are always fit to seize the prey that the teeth are suited to tear up and break and the intestine is able to digest, and the limbs for movement are fit to take the animal where that prey dwells, and no organ ever remains unused. So, e.g., the anteater not only has long claws on its forefeet in order to rip apart the termite mound, but also, for boring into this mound, it has a long, cylindrical snout with a little mouth and a long threadlike [41] tongue covered with a sticky slime, that it thrusts deep into the termite nest and draws back stuck full of these insects; conversely, it has no teeth because it needs none. Who does not see that the form of the anteater is related to termites as an act of will is to its motive? Thus, there is such an unparalleled inconsistency between the anteater's complete absence of teeth and its powerful arms and strong, long, curved claws, that, if the earth were to undergo an upheaval, then to the race of rational beings which would then arise, the fossilized anteater would be an insoluble riddle if they did not know of the termite.[58] – As a rule, the necks of birds, as those of quadrupeds, are as long as their legs so that they can reach to the ground for their food, but among aquatic fowl the neck is often much longer because these birds, while swimming, fetch their sustenance from under the surface of the water.[*],[59] Wading birds have disproportionately long legs in order to be able to wade without drowning or becoming wet, and accordingly have very long necks and beaks, these last being strong or weak, depending on whether they crush reptiles, fish, or worms, and their intestines always conform to this; but then wading birds have neither claws like those of birds of prey nor webbed feet like those of ducks, for nature's law of parsimony[a] permits no superfluous organ. It is exactly this law, taken together with the contrasting fact that no animal ever lacks an organ required for its way of life (but everything, even the most diverse things, are in harmony and are as if calculated for a specially determined way of life, for the element in which their prey dwells, for pursuit, for subduing, for crushing, and for digesting the prey), that proves that the way of life the animal willed to lead for its maintenance was what determined its structure – but not [42] the opposite;

and that things are just this way, as if a cognition of the way of life and its external conditions had preceded the structure, and as if each animal had appropriately chosen its gear before it embodied itself, no less than a hunter, before he proceeds, selects all his equipment, flint, shot, powder, game bag, hunting knife, and clothing, according to the wild animal that he will kill; he does not shoot at the wild sow because he carries a rifle; rather, he took the rifle and not the shot gun because he went out after wild sows; and the steer does not butt just because it has horns; rather, it has horns because it wills to butt. But to supplement the proof we must still add that many animals, while they are growing, express the wilful striving that a limb should serve before the limb itself is present, and thus its use precedes its existence. Thus young bucks, rams, and calves butt with just their bare heads before they have horns; the young boar charges, tossing its head around while it still lacks the tusks which correspond to the intended effect; in contrast, it does not use the little teeth which it already has in its mouth with which it could actually bite. Thus its way of defending itself is not directed by an existing weapon, but the opposite. Galen had already remarked on this (*On the Uses of the Parts of Animals*,[b] I, 1) and Lucretius before him (V, 1032–9[c]). Through this we become absolutely certain that will does not use tools as something it happens to find, as something added on, something proceeding from cognition, using the parts just because they and no others exist, but what comes first and originally is the striving to live in this way and to struggle in such a way, which presents itself not only in the use of these tools, but already in the very existence of the weapon, so much so that the former often precedes the latter and thereby indicates that the weapon appears because the striving exists, not the opposite: and so it is with each part generally. Aristotle already expressed this when he said of an insect armed with a stinger: 'because it has the passion, it has the weapon' (*On the Parts of Animals* IV, 6[d]) – and further on (ch. 12) putting it generally [43] 'nature creates the organ for the task, but not the task for the organ'.[e,60] The result is: the structure of every animal is directed by will.

This truth forces itself on the thoughtful zoologist and zootomist with such evidence that, if his mind is not at the same time purified by a more profound philosophy, he could be misled into strange errors. This actually happened to a zoologist of the first rank, the unforgettable *de Lamarck*, who won immortal merit through the discovery of the most profoundly conceived classification of animals into vertebrates and invertebrates.[f] For in his *Philosophical Zoology*,[g] Vol. 1, ch. 7 and his *Natural History of Invertebrates*,[a] Vol. 1, Introduction, pp. 180–212, he asserts in all seriousness and takes the trouble to demonstrate thoroughly that the form of any species of animals, its characteristic weapons and externally effective organs of all sorts, were in no way present at the species' origin, but gradually *came into existence* over the *course of time* and through continued generation, precisely because of the animal's own repeated efforts and resulting habits, as a consequence of the wilful strivings evoked in it by the nature of its situation and environment. Thus, he says, aquatic birds and mammals first gradually acquired webbed feet because while swimming they stretched and spread their toes; as a result of their wading, wading birds got long legs and long necks; horned cattle first gradually obtained horns, because without an effective bite they could only fight with their heads, and this belligerence gradually produced horns or antlers; in the beginning the snail was like other molluscs, without antennae, but from the need to touch objects lying before it, such antennae gradually came to be; the whole race of felines first acquired claws through time out of the need to tear up prey, and from the need when walking to preserve and at the same time not to be hindered by their claws, felines acquired a sheath for their retractile claws; the giraffe, in arid, grassless Africa, depending on the leaves of tall trees, stretched its forelegs and neck so that it [44] acquired its amazing form, with a frontal height of 20 feet. And thus he examines many types of animals, each arising through the same principle, in the process of which he does not notice the obvious objection that before the species of animals had gradually produced the organs necessary for their preservation over the course of countless generations, they would indeed have perished and died out for lack of such organs. That is how blind an accepted hypothesis makes someone. However, here this hypothesis arose through a quite correct and profound grasp of nature, and is an error of genius that despite all its absurdity still does him honour. The truth in it belongs to him as a natural scientist: he correctly saw that the animal's will is what is original and has determined its organization. The falsehood, however, is the responsibility of the backward state of metaphysics in France, where the great and monumental theory of the ideality of space and time and everything presented in them still has not yet reached and where *Locke* and his follower, that weakling *Condillac*, still prevail, so that bodies are considered to be things in themselves and time and space are considered to be qualities of things in themselves. Therefore *de Lamarck* could not think of his construction[b] of beings in any other way than in time, through succession.[c] Kant's profound influence has forever banned from Germany errors of this sort, as well as the crass, absurd atomism of the French and the edifying physico-theological considerations of the English. The influence of a great mind is so sustained and beneficial, even for a nation that could abandon it in order to run after windbags and charlatans. However, *de Lamarck* could never arrive at the idea that the animal's will, as thing in itself, lies outside of time and in this sense could be more original[a] than the animal itself. Therefore he first posits the animal without definite organs, even without definite striving, but merely equipped with perception:[b] this perception makes the animal familiar with the circumstances in which it has to live and from this familiarity there arises its striving, i.e., its will, and from this ultimately arise its organs, or specific corporeality, even with the help of generations and thus over immense periods of time. Had he had the [45] courage to work it through, he would have had to accept a primordial animal,[c] which consequently would have had to be without any form and organs, and then transformed into the myriad forms of animals of all sorts, from gnat to the elephant, according to climatic and local circumstance and its cognition. – In truth, however, this primordial animal is *will to life*;[d] however, as such, it is something metaphysical, not physical. Certainly each animal species has determined its form and organization through its unique will and according to the circumstances in which it willed to live; however, not as something physical in time, but as something metaphysical outside of time. Will did not proceed from cognition, and the latter did not exist along with the animal before will appeared as a mere accident, something secondary, indeed something tertiary; rather, will is that which is first, is being in itself: its appearance (mere representation in the cognizing intellect, the forms of which are space and time) is the animal, equipped with all the organs that present the will to live under these particular circumstances.[e] Intellect, cognition itself, belongs among these organs and, like the others, is precisely adapted to each animal's way of life; whereas *de Lamarck* has will first arise from intellect.

Let us consider the innumerable forms of animals. How much each animal is simply just the image[f] of its willing, the visible expression of will's striving that constitutes its character. The difference among forms is merely the image[a] of this difference of character. Deadly animals, destined for fighting and predation, exist with fearsome teeth and claws and with strong muscles; their sight penetrates great distances, especially if, like the eagle and condor, they have to spot their prey from dizzying heights.[61] The timid animals that have the will to seek their safety not through fight, but through flight, have appeared with slender, speedy legs and acute hearing, instead of any weapons; the most timid among these, the hare, has even needed a striking lengthening of the outer ear.[62] That which is external corresponds to that which is internal: the carnivores have short intestines, the herbivores have long ones for a lengthy process of assimilation; vigorous respiration and rapid blood circulation, represented by appropriate organs, are necessary conditions associated with great muscular strength and [46] irritability, and nowhere is it possible to find the opposite.[63] Each particular striving of will presents itself in a particular modification of form. Therefore, *the place where the prey dwells determines the form of the pursuer*; now if any prey has withdrawn into an element difficult of access, into a remote hiding place, into night and darkness, then the pursuer assumes the suitable form, and no form is so grotesque that will to life would not assume it in order to attain its end. In order to extract the seed from the scale of the pine cone, the crossbill (*Loxia curvirostra*[64]) appears with its abnormally shaped bill.[b] In order to seek reptiles in their marshes, wading birds appear with their very long legs, very long necks, very long bills, the most unusual shapes. To dig out termites, the four-foot-long anteater appears with short legs, strong, and long, narrow, toothless snout, but with a threadlike, sticky tongue. The pelican goes fishing with a monstrous pouch under its beak in which to pack lots of fish. To strike sleeping animals in the night, the owl flies out with enormous pupils in order to see in the dark, and with very soft feathers, so that its flight is noiseless and it does not awaken the sleeping animals. *Silurus*, *Gymnotus*, and *Torpedo*[c] even carry a complete electric apparatus for stunning the prey before they can reach it, as well as to use as a weapon against *their* pursuer.[65] For wherever a living thing breathes, another immediately comes along to devour it[*,66] and each is as if aimed at and calculated, even down to the smallest detail, for the annihilation of [47] another. E.g.: among insects, for the future food of their brood, the ichneumon flies lay their eggs in the body of certain caterpillars and similar larvae, into which they bore a hole with their stinger. Now those that rely on larvae crawling about freely have quite short stingers, about 1/8 inch; in contrast, *Pimpla manifestator*,[d] which depends on *Chelostoma maxillosa*,[e] the larvae of which lie deeply hidden in old wood, into which the others cannot reach, have a stinger 2 inches long, and *Ichneumon strobillae*[a] have one nearly as long to lay their eggs in larvae which live in pine cones; with these stingers, they penetrate to the larva, sting it, and lay an egg in the wound, and the product of the egg later devours the larva (*Kirby* and *Spence*, *Introduction to Entomology*, Vol. 1, p. 355).[67] The pursued animal shows its will to escape its enemy just as clearly in its defensive armour. Hedgehogs and porcupines raise a forest of spears into the air. Armoured from head to foot, impervious to teeth, beaks, and claws, armadillos, scaly anteaters, and tortoises make their appearance, and it is just the same on a smaller scale with the whole class of crustaceans. Others have sought protection not in physical resistance, but in deception of the pursuer: thus the *Sepia*[b] has provided itself with the material for a dark cloud that it spreads around itself at the moment of danger;[68] the sloth is deceptively like the moss-covered bough, the tree frog the leaf, and countless insects are the same; the louse on the Negro is black;[*] indeed it is the same with our flea,[69] but the flea has relied on its long, irregular hopping, for it has gone to the trouble of making such an unprecedentedly[70] powerful apparatus. – But we can make the anticipation that takes place with all of these arrangements comprehensible to ourselves by way of what is apparent in creative drives.[c] The young spider and the ant lion do not know their prey when they set their traps for the first time. And it is the same on the defensive: according to *Latreille* the insect *Bombyx*[d] kills *Panorpe*[e] with its stinger, although the silkworm does not eat [48] the scorpion fly nor is the silkworm attacked by the scorpion fly; rather, the silkworm does so because the scorpion fly will later lay its eggs in the silkworm's nest and thereby impede the development of the silkworm's own eggs, which it does not know. Such anticipations again prove the ideality of time, which almost always comes up in discussions as soon as will as thing in itself is the topic. In what is considered here, as well as in many other respects, instincts of animals and physiological functions serve to explain one another because in both will is active without cognition.

Just as with every organ and every weapon, offensive or defensive, in each form of animal, will has equipped itself with an *intellect* as a means to preserving the individual and species: therefore, even the ancients called intellect *hêgemonikon*,[a] i.e., the guide and leader.[71] As a result, intellect is determined only for the service of will and is always precisely suitable to this service. Predators needed and obviously have much more intellect than herbivores. The elephant and to a certain degree the horse, too, constitute an exception: but the elephant's most amazing understanding was necessary because, with a lifespan of two hundred years and quite scant progeny, it must provide for longer and more secure preservation of the individual, and indeed in areas which teem with the most ravenous, strongest, and agile predators.[72] The horse, too, has a longer lifespan and reproduces fewer young than ruminants: besides without horns, tusks, or trunk, furnished with no weapons other than perhaps its hoof, it needed more intelligence and greater speed to escape its pursuer. The apes' extraordinary understanding was necessary partly because, along with a lifespan which stretches to fifty years for even those of moderate size, they have few progeny, bearing only one young at a time; but particularly because they have *hands*, which must be directed by an understanding that makes proper use of them;[73] and they are dependent on the use of these hands for their defence by means of external weapons, such as stones and sticks, as well as for their nourishment, which requires all sorts of artificial means[74] and generally makes necessary a social and artificial system of looting, passing stolen fruit from hand to hand, posting [49] sentinels, and the like. In addition this understanding is characteristic of their youth since in youth muscular strength is still undeveloped. E.g. the young pongo, or orang-utan, has a relatively predominant brain and much greater intelligence in youth than in maturity, when muscular strength has reached great development and takes the place of intellect, which correspondingly declines starkly. The same applies to all apes: intellect vicariously takes the place of what in the future will be muscular strength. This process is explained in detail in *Summary of the Observations of Fr Cuvier on the Instincts and Intelligence of Animals* by Flourens, 1841,[a] from which I have already quoted the relevant passages in the 2nd volume of my principal work at the conclusion of the 31st chapter, which is the sole reason for not repeating them here. – In general, among mammals intelligence increases by steps from the rodents to the ruminants then to the pachyderms, from there to the predators, and finally to the quadrumana: and anatomy shows the gradual development of the brain in the order corresponding to this result of external observation (according to Flourens and Fr Cuvier).[*,75] – Among the reptiles, snakes are the cleverest, since they can even be trained because they are predators, and especially the venomous ones reproduce [50] more slowly than the others. – As it is with respect to physical weapons, so too we find will everywhere as that which is primary, and its tool, intellect, as that which is secondary.[a] Predators do not go on the hunt, nor do foxes go thieving because they have more understanding; instead, because they will to live by hunting and thieving, they have more understanding, just as they have a stronger bite and claws. The exceeding[76] subtlety of the fox's understanding even compensates for what the fox lacks in muscular power and strength of bite. – The case of the dodo bird,[b] *Didus ineptus*, on Mauritius Island provides a specific illustration of our principle. The species of this bird, as is known, is extinct, and as its Latin species name certainly indicates it was extraordinarily dumb, which explains its extinction; thus it is apparent that here nature for once went too far in following its law of parsimony[c] and to a certain extent brought forth, as it does so often in individual cases, an abortion of a species which as such could not have survived.[77] – If on this occasion someone would pose the question of whether nature should at least have provided as much understanding to insects as is necessary for them not to fly into a candle flame, then the answer is: 'certainly, except it was not known to nature that human beings would make candles and light them, and nature does nothing in vain.'[d] Thus insects' understanding is insufficient only in an unnatural environment.[**,78]

Of course intelligence generally depends first of all on the cerebral system, and this stands in a necessary relation to the rest of the organism; therefore, cold-blooded animals lag far behind the warm-blooded, and invertebrates far behind the vertebrates. But the organism is simply will become visible, and since will is what is absolutely first, everything is always referred back to it: its needs and aims, in each appearance, provide the measure for [51] the means, and these must accord with one another. Plants have no apperception because they have no locomotion, for of what use would this be to them if as a result they would not be able to seek that which is of benefit to them or flee that which is harmful? And conversely, locomotion could be of no use to them, since they have no apperception to guide it. Therefore, in the plant there still does not appear an inseparable duality of sensibility and irritability; rather they slumber in what is fundamental to the plant, the power of reproduction, in which power alone will objectifies itself here. The sunflower, and all plants, will light; but their movement towards light is not yet separated from their perception[a] of light, and both coincide with the plants' growth. – Human understanding, so superior to that of any other, supported by the addition of reason (the capacity for non-intuitive representation, i.e., concepts, reflections, faculty of thought) still is only partly related to humans' needs, which greatly exceed those of animals and increase infinitely, and is partly related to humans' complete lack of natural weapons and natural covering, and humans' relatively weak muscular power, in which they are by far behind apes of similar size,[79] as well as humans' inability to flee, since they are far outstripped in running by all four-footed mammals,[80] finally owing to humans' slow reproduction, lengthy childhood, and long lifespan, which require secure preservation of the individual. All these great requirements must be met by intellectual powers; which is why these are so predominant here. But everywhere we find intellect to be that which is secondary, subordinate and merely determined to serve the aim of will. True to this determination, as a rule intellect remains always in the service of will. Nonetheless I have shown in detail in the 3rd book, the aesthetic part, of my principal work[b] [52] and discussed later in *Parerga and Paralipomina*, Vol. 2, §§ 50–57 and § 206, how in individual cases, through an abnormal preponderance of cerebral life, it escapes this subservience, and purely objective cognition which rises to the level of genius makes its appearance.

Now, given all these observations on the precise correspondence between will and the organization of any animal, and starting from this standpoint, if we examine a well-ordered osteological collection, then it will probably seem as if we were looking at one and the same being (De Lamarck's primordial animal, more correctly, will to life) changing its shape according to the circumstances and bringing about a multiplicity of forms from the same number and ordering of its bones by stretching and shortening, strengthening and stunting them. That number and ordering of bones, which

Geoffroy Saint-Hilaire (*Principles of Zoological Philosophy*,[a] 1830) has called the *anatomical element*, remains, as he demonstrates thoroughly, essentially unaltered in the whole array of vertebrates and is a constant quantity, absolutely given in advance, irrevocably fixed by unfathomable necessity – and I would like to compare this immutability to the permanence of matter through all physical and chemical alterations: I will return to this soon. But along with this immutable number and ordering, these bones have the greatest mutability, adaptiveness, and pliancy with regard to their size, their shape, and the end they are applied to, and we see these determined by *will* with original power and freedom according to the ends that the external environment forces on it: it makes of them whatever its current needs demand. If as an ape it wants to climb around in trees, it at once grasps at the branches with four hands and thereby stretches the *ulna* along with the *radius* to great length; at the same time it lengthens the *os cossygis* to a prehensile tail an ell long in order to hang on branches with it and to swing from one bough to another.[81] In contrast, these same arm bones are shortened until they cannot be recognized when it crawls in the muck as a crocodile or swims as a seal or burrows as a mole, in the last of which the *metacarpus* and the *phalanges* are enlarged into disproportionately large shovel-like paws at the expense of all the other bones. But if it wants to fly across the air as a [53] bat, then not only the *os humeri*, *radius*, and *ulna* will be extended to unprecedented length, but the *carpus*, *metacarpus*, and *phalanges digitorum*, otherwise so small and secondary, are extended, as in the vision of Saint Anthony, to a monstrous length, greater than that of the animal's body, in order to span the webs between them. If, as a giraffe, it has put itself on unprecedentedly high forelegs to be able to nibble on the crowns of Africa's high trees, the same seven cervical vertebrae, which never vary in number and were compressed in the mole to the point of being unrecognizable,[82] are now proportionally lengthened so that here, as generally, the length of the neck equals the length of the forelegs, so that the head can reach down to drink water. But if it appears as an elephant, a long neck cannot possibly bear the burden of an enormous, massive head made even heavier by six-foot tusks, so the neck remains exceptionally short, and as an expedient a trunk extends to the earth to raise up its food and water and also to reach to the crowns of the trees. In all of these metamorphoses we also see the skull, the receptacle of the intelligence, extend, develop, and become domed, depending on whether the degree of difficulty in providing subsistence requires more or less intelligence,[b] and to the practised eye the different degrees of understanding[c] clearly show from the arched forms of skulls.

Of course, in this, the *anatomical element* mentioned above as fixed and immutable, remains a riddle insofar as it does not fall within the teleological explanation, which begins with the presupposition of this element; while in many instances the intended organ could have come about and been just as appropriate given another number and ordering of the bones. E.g. it can be clearly understood why the human skull is assembled out of 8 bones, just so that by means of the fontanelles it can be pushed together during birth, but it is not understood why the chick, which breaks through its egg, must have the same number of skull bones. Thus we must assume that this anatomical [54] element rests in part on the unity and identity of will to life and in part on the fact that the archetypes[d] of animals proceed one from another (*Parerga*, Vol. 2, § 91) and hence the fundamental type of the entire stock[e] was retained. It is this anatomical element which Aristotle understands with his 'necessary nature',[f] and he calls the mutability of its forms each according to its purpose, 'nature according to purpose'[g] (see Aristotle *On the Parts of Animals* III, ch. 2, towards the end: 'the necessary way of nature', etc.[g]) and explains from this that among horned cattle the material for the upper incisors is transformed into the horns: quite correct, since only the hornless ruminants, that is camels and musk-deer, have upper incisors while they are absent in all those that have horns.[83]

Both the complete suitability of structure to the animal's ends and external life condition, illustrated here by the skeleton, and the quite amazing purposiveness and harmony in the animal's inner mechanism, can be made comprehensible by no other explanation or assumption, not even remotely, than by the truth, already firmly established by other means, that the body of the animal is just *its will itself*, intuited in the brain as representation, and hence subordinate to the forms of space, time, and causality[84] – thus, the mere visibility, objecthood[a] of will. For given this assumption, everything in and of the animal must cooperate towards the final end: the life of the animal. For in the animal nothing useless, nothing superfluous, nothing lacking, nothing unsuitable, nothing insufficient or imperfect in its kind can be found; rather, everything necessary must be there, exactly as much as it is necessary, but no more. For here the master, the work, and the material are one and the same. Therefore, every organism is a remarkably perfect masterpiece. Here the will did not first harbour the intent, recognize the end, and then suit the means to it and subdue the material; rather, its willing is immediately the end and immediately the achievement: thus, it required no external means that first had to be mastered: here willing, doing, and achieving are one in the same. Therefore the organism stands forth as a miracle, and [55] it cannot be compared to any work of human artifice effected by the lamplight of cognition.[*,85]

Our amazement at the infinite perfection and purposiveness in the works of nature fundamentally rests on the fact that we consider them in terms of our own works. First of all, among our own works the will to work and the work are two different things; then between these two lie still two others: first, the medium of representation, that as such is foreign to will, but through which it has to pass before it is actualized here; and second the material that is foreign to will working here, on which a foreign form must be forced, and which the material resists because it already belongs to another will, namely, its natural character,[b] its substantial form,[c] the (Platonic) Idea that is expressed in it. So it must first be overpowered and still it will always intrinsically resist, no matter how profoundly the artificial form may have been forced on it. It is completely different with works of nature, which, unlike the former are not mediated, but are immediate manifestations of will. Here will works in its originality,[a] thus without cognition: will and [56] work are not distinguished by any mediating representation: they are one. And even the material is one with it, for matter is the mere visibility of will. For this reason we find matter here to be completely permeated by form; but they are rather of quite the same origin, only existing mutually and to this extent as one. That we separate them here, as in an artifact,[b] is a mere abstraction. Pure matter, absolutely without form and properties,[c] which we think of as the material of a natural product, merely exists in thought[d] and cannot occur in experience. In contrast, the material of an artifact is empirical matter, hence, matter already formed. Identity of form and matter is the character of natural products; their diversity, of artifacts.[*,86] Because in a natural product matter is the mere visibility of form, we also see form appear empirically as the mere offspring of matter, issuing forth from within matter, in crystallization, in vegetable and animal spontaneous generation,[e] which is at least not to be doubted among epizoa.[**],[87] – For this reason, it can be assumed that nowhere, on no planet or satellite, can matter lapse into a state of *endless* rest; rather, its intrinsic forces (i.e. will, of which it is the mere visibility) will always put to an end any rest that occurs, always awaken from their sleep in order to begin their acting anew as mechanical, physical, chemical, organic forces, since these always await their opportunity.[88]

But if we want to understand the working of nature, then we must not attempt to do so through comparison with our works. The true essence of any animal form is an act of [57] will lying outside of representation, and hence also outside its forms of space and time, an act of will that for just this reason knows no succession nor juxtaposition, but absolute unity. But now if our cerebral intuition grasps that animal form and if the scalpel even dissects its insides, then that which was originally and inherently foreign to this cognition and its laws is revealed to the light of cognition, but that which was foreign must now present itself in accord with the forms and laws of cognition. The original unity and indivisibility of that act of will, of this truly metaphysical being, now appears to be pulled asunder into a juxtaposition of parts and a succession of functions, which, however, present themselves as closely bound to one another through the strictest relation for their mutual assistance and support, as means and end coordinated. The understanding that apprehends in this way is filled with wonder at the profoundly conceived arrangement of parts and combination of functions because the understanding also assumes that the way it became aware of the original unity reestablishing itself out of plurality (which had first been brought about by the understanding's cognitive form) is the origin of this animal form. This is the sense of Kant's great theory that purposiveness is first brought to nature by the understanding, which then marvels at the miracle that it itself has first created.[*],[89] If I may be permitted to explain such a lofty subject through a trivial analogy, this is the same as if the understanding were astonished that when the single digits of any of the products of multiplication of 9 are added together, they again yield 9 or a number whose digits, when added together, make 9 – although the understanding itself had prepared this miracle in the decimal system. – The physico-theological argument has it that, prior to the world's real existence, it existed in an understanding, and the argument states: if the world is supposed to be purposive, it must have existed previously as a representation before it came into existence. But I say, in Kant's sense, if the world is supposed to be a representation, then it must present itself as purposive, and this occurs first of all in our intellect.

Certainly [58] from my theory it follows that every being is its own work. Nature, which can never lie and is naïve like a genius, says exactly the same thing, insofar as every being kindles the spark of life in another exactly like it, and then, before our eyes, makes itself, taking the material for this from the outside, and taking the form and motion from itself, which process is called growth and development. As such every being stands before us empirically as its own work. But the language of nature is not understood because it is too simple.

a *Aktion*

b *Gesammtwollen*

c *Inbegriff*

d *Abbild*

e *Ueber die Skelette der Raubthiere*

f *Neigungen und Begierden*

a *Entstehung*

b *Ardschunas Reise zu Indras Himmel, nebst andern Episoden des Mahabharata* [Berlin: Königliche Akademie der Wissenschaften]

***** The *Matsya-Purāna* has the four faces of *Brahman* arise in the same way, namely, by the fact that, falling in love with *Satarupa*, his daughter, he stared at her; however, to avoid his gaze, she stepped aside; and now ashamed, he did not want to follow her movement; whereupon he grew a face on that side; then she again did the same, and so forth, until he had four faces. (*Asiatic Researches*, Vol. 6, p. 473)

a *Willensäußerung*

b *Zweckmäßigkeit*

c *offenbare Absichtlichkeit*

d *empirischer Kenntniß*

e *Ansicht*

f *Erkennen*

g *Erkenntniß*

***** With this term I would like to add a fourth to the three proofs mentioned by Kant, specifically the proof from terror [*a terrore*], which is indicated in the ancient phrase of Petronius, ‘first of all fear made the gods’ [*primus in orbe Deos fecit timor* (Petronius, *Fragments*, 27)] and of which we can see an incomparable critique in *Hume's Natural History of Religion*. Understood in this sense, the theologist Schleiermacher's attempted proof from the feeling of dependence might even have a sort of truth, if not exactly what the author himself thought it to be. [‘Ceraunological’ is a coinage from the Greek *keraunos* (thunder, thunderbolt)]

a [*Disquisitions on Matter and Spirit. To which is added the history of the philosophical doctrine concerning the Origin of the Soul and the Nature of Matter; with its influence on Christianity, especially with respect to the Doctrine of the Preexistence of Christ*, 2nd edn, 1782]

b *nervus probandi*

c [*WWR* 1, (Hübscher *SW* 2, 606)]

a [Francis Henry Egerton, 8th Earl of Bridgewater (1756–1829) left £8,000 to the potential author of a treatise ‘On the Power, Wisdom and Goodness of God, as manifested in the Creation’]

b *Sicut lux se ipsa et tenebras manifestat, sic veritas norma sui et falsi est*. [*Ethics*, P. 2, Proposition 43. Note]

c *das* punctum saliens *des Welteies*

d *mundus intelligibilis*

e *mundus sensibilis*

f *Kunsttrieb*

a [*WWR*, Vol. 2, ch. 27, entitled *Vom Instinkt und Kunsttrieb* (On Instinct and Creative Drive)]

b *Bau*

c *Nil ideo quoniam natum est in corpore, ut uti Possemus; sed, quod natum est, id procreat usum.* [*De rerum natura*, Leipzig: Wolf (1801) IV, 831ff.]

***** I have seen (*Zooplast*[*isches*] *Kab*[*inett*]1860) a *hummingbird* beak whose is just as long as the entire bird, including head and tail. Doubtless, this hummingbird had to fetch its sustenance from some sort of depth, be it just a deep calyx of a flower (Cuvier, *Comparative Anatomy*, Vol. IV, p. 374 [*Leçons d’ anatomie comparée*, Paris (1835)]): for without a need, it would not have given itself the luxury nor taken on the burden of such a beak

a *lex parsimoniae naturae*

b *De usu partium anim*[*alium*]

c [In *De rerum natura* (*On the Nature of Things*)]

d διὰ τὸ θυμὸν ἔχειν ὅπλον ἔχει (*quia iram habent, arma habent*), *de part*[*ibus*] *animal*[*ium*] IV, 6 [683a 7]

e Τὰ δ᾽ ὄργανα πρὸς τὸ ἔργον ἡ φύσις ποιεῖ, ἀλλ᾽ οὐ τὸ ἔργον πρὸς τὰ ὄργανα (*natura enim instrumenta ad officium, non officium ad instrumenta accommodat*) [*de partibus animalium* IV, 12. 694b13]

f *Vertebrata und Nonvertebrata*

g *Philosophie zoologique* [*ou Exposition des Considérations relatives à l'histoire naturelle des animaux*, Paris: Dentu, 1809]

a *Hist*[*oire*] *nat*[*urelle*] *des animaux sans vertèbres* [Paris: Verdière (1815–22)]

b *Konstruktion*

c *Succession*

a *ursprünglicher*

b *Wahrnehmung*

c *Urthier*

d *Wille zum Leben*

e *den Willen, unter diesen speciellen Umständen zu leben*

f *Abbild*

***** Sensing this truth, R. Owen, having reviewed the many fossilized *marsupialia* in Australia, some of them very large – some as big as the rhinoceros – already drew the correct conclusion in 1842 that there must at the same time have been a large predator; he later proved this when in 1846 he obtained a part of the fossilized skull of a predator of the same size as a lion, which he named *Thylacoleo*, i.e., lion with a pouch [*Thylacinus cynocephalus*, Tasmanian Wolf], since it was also a marsupial. (See *Owen's Lecture at the Government School of Mines* in the article 'Palaeontology' in the [*London*] *Times*, 19 May 1860)

a *Bild*

b *Freßwerkzeug* [literally, '(animal's) feeding organ']

c [catfish, electric eel, and torpedo fish or electric ray]

d [now *Ephialtinae manifestator*, a parasitic wasp]

e [commonly, the osmiine bee]

***** Blumenbach, *de hum. gen. variet. nat.*, p. 50 [*i.e. de generis humani varietate nativa* (*On the Human Race and Native Varities*), Göttingen: Vandenhoeck & Ruprecht (1756)] – Sömmering, *vom Neger* [*on Negroes*], p. 8 [i.e. *Über die körperliche Verschiedenheit des Negers vom Europäer…* (*On the Physical Difference between Negroes and Europeans*), Frankfurt-am-Main: Boselle (1785)]

a [commonly, the Ichneumon wasp]

b [cuttlefish]

c *Kunsttrieben*

d [silkworm]

e [scorpion fly]

a ἡγεμονικόν

a *Résumé* [*analytique*] *des observations de Fr*[*édéric*] *Cuvier sur l'instinct et l'intelligence des animaux* [Paris: Ch. Pitois]

* Moreover rodents appear to be given the lowest position more from *a priori* than *a posteriori* considerations, specifically because rodents have no or only extremely slight convolutions of the brain; so too much weight has been laid on these convolutions: sheep and cattle have numerous, deep convolutions, but how intelligent are they? In contrast, the beaver's intelligence supports its creative drive a great deal; even rabbits show a significant intelligence, about which the most exact thing to be found is in the fine book by *Leroy*: *Philosophical Letters on the Intelligence of Animals* [*Lettres philos*(*ophiques*) *sur l'intelligence* (*et la perfectibilité*) *des animaux* (Paris: Valade, 1802)], letter 3, p. 19. But even rats provide proof of extraordinary intelligence: noteworthy examples of this are found collected in the *Quarterly Review*, No. 210, January–March 1857, in a special article entitled 'Rats'. – Among the birds, too, the predators are the smartest; thus many, especially the falcons, can be trained to a high degree

** That the negroes were enslaved more than other races, and on a large scale, is evidently a result of their being, in contrast to other races, inferior in intelligence – which, however, does not justify such slavery.

a *prius…posterius*

b *des Vogels Dudu, auch Dronte*

c *lex parsimoniae*

d *natura nihil agit frustra* [*de incessu animalium* (*On the Gait of Animals*) 2, 704b, 15]

a *Wahrnehmung*

b [*The World as Will and Representation*, Vol. 1]

a *principes de philosophie zoologique*

b *Intelligenz*

c *des Verstandes*

d *Urformen*

e *Grundtypus des ganzen Stammes*

f ἀναγκαία φύσις

g τὴν κατὰ λόγον φύσιν

g *de partibus animalium* III, c.2 *sub finem*: πῶς δὲ τῆς ἀναγκαίης φύσεως κ.τ.λ. [663b22–3]

***** Therefore the sight [*Anblick*] of any animal form offers us a totality, unity, perfection, and harmony strictly carried out in all its parts, which are based so completely on one fundamental idea that at the sight of it, even the most fantastic animal form ultimately appears to one who considers it profoundly as if it were the only correct, even the only possible form, and there could be no other form of life than just this. The expression ‘natural’ rests fundamentally on this, when we use it to refer to the fact that something is a matter of course and cannot be otherwise. In Venice *Goethe* too was struck by this unity at the sight of marine snails and common crabs; he cried out ‘how exquisite and splendid a living thing is! how suited to its environment, how true, how real!’ ([*From my*] *Life*, Vol. 4, p. 223). Therefore, no artist can correctly imitate this form if he has not made it the object of his study for years and has not fathomed its rhyme and reason; otherwise, the artist's work looks as if it were pasted together: it may have all the parts, but it lacks that which holds it together, the gist of the thing, the Idea, which is the objecthood of the original act of will presenting itself as this species

a *Objektität*

b *Naturbeschaffenheit*

c *forma substantialis*

* It is a great truth that *Bruno* expresses (*On the Immense and Innumerable* [*de Immenso et Innumerabili* (1591)]), 8, 10: ‘*Ars tractat materiam alienam; natura materiam propriam. Ars circa materiam est; natura interior materiae*’ [‘Art works with foreign material; nature with its own. Art is outside matter; nature is within matter’]. He treats it more thoroughly in *On cause*, [*della causa* (1584)] ‘Dialogue 3’, pp. 252ff. – On p. 255 he explains the *forma substantialis* [substantial form] as the form of any natural product that is one in the same as the *soul*

** Thus the *dictum* of the scholastics is proven: *materia appetit formam* [‘matter strives after form’] (Cf. *The World as Will and Representation*, Vol. 2, p. 352 [Hübscher includes this parenthetical reference to Schopenhauer's principal work, dating back to Frauenstädt's *Arthur Schopenhauer's Sämmtliche Werke*, 2nd edn (1877); Hübscher *SW* 3, 352])

a *Ursprünglichkeit*

b *Kunstwerk*

c *absolut form- und beschaffenheitslose Materie*

d *ens rationis*

e *generatio aequivoca*

***** Cf. *The World as Will and Representation*, Vol. 2, p. 330 [Hübscher *SW* 3, 375]

[59] Plant physiology

The corroborations I have to cite concerning the appearance of will in plants come primarily from the French, a nation with a decidedly empirical bent, not wanting to go a single step beyond that which is immediately given. Moreover the one reporting the information, *Cuvier*, by insisting on the purely empirical, gave occasion for the famous dispute between himself and *Geoffroy St Hilaire*. Thus it should not surprise us if here we do not encounter such definite language as in the German evidence cited earlier and if we see every concession made with cautious reserve.

In his *History of the Progress of Natural Science from 1789 to the Present*,[a] Vol. 1 (1826), *Cuvier* says, p. 245: ‘Plants have certain apparently spontaneous (*spontanés*) movements that they show under certain circumstances and that are sometimes similar to those of animals, so that on account of this, a kind of sensation and *will* might be attributed to plants, which might be done especially by those who want to see a similarity to the movements of the *internal* parts of animals. In this way the tops of trees always tend toward the vertical, except when they incline toward the light. Their roots reach for rich soil and moisture and deviate from a straight path [60] to find these. But these various directions are not explicable from the influence of external causes unless an inner natural tendency is assumed, one which is capable of being stimulated and is different from mere inertia in inorganic bodies…*Decandolle* has performed noteworthy experiments that indicated to him a type of tendency among plants that is overcome by artificial light only after a certain amount of time. Plants enclosed in a cellar continually lit by lamps did not cease for several days to close upon the onset of night and open in the morning. And there are even other tendencies that plants can acquire and cannot give up. Flowers that close in wet weather in the end remain open when the rain persists for too long. When Mr *Desfontaines* took a sensitive plant[a] with him in a wagon, at first it contracted because of the shaking, but finally upon complete rest it re-extended. Thus here light, moisture, etc. work by means of an inner tendency, which can be eliminated or altered through the exercise of such activity itself, and the vital force of plants is, like that of the animals, subject to fatigue and exhaustion. The *Hedysarum gyrans*[b] is especially noted for the movements which its leaves undergo day and night without requiring any occasion for it. If any sort of appearance in the plant kingdom can deceive us and remind us of the voluntary movements of animals, then it is certainly this. Broussonet, Silvestre, Cels, and Hallé have described it thoroughly and shown that its activity alone depends on the plant's healthy condition.'[c]

In the 3rd volume of the same work (1828), p. 166, *Cuvier* says: 'Mr *Dutrochet* adds physiological observations as a result of the experiments that he himself has conducted and which, according to his opinions demonstrate that the movements of plants are *spontaneous*, i.e., dependent upon an internal principle that immediately senses the influence of external agents. However, because he is reluctant to attribute sensibility to plants, he substitutes the word *nervimotilité* for it.' – I must note here that what we understand by the concept of [61] *spontaneity*, when more closely examined, always amounts to an expression of will, of which that concept would then only be a synonym. The only difference is just that the concept of spontaneity is derived from external intuition; whereas that of expression of will is derived from our own consciousness. – A remarkable example of the power of the impulse of this spontaneity, even in plants, is provided by the *Cheltenham Examiner*, which the *Times* repeats on the 2nd of July, 1841: 'Last Thursday in one of our most crowded streets, three or four enormous mushrooms performed a heroic feat of a new kind by lifting up a huge paving stone in their strenuous effort to break through to the visible world.'[d,90]

In the *Memoirs of the Academy of Sciences for the Year 1821*, Vol. 5, (Paris, 1826)[e] *Cuvier* says on p. 171: 'For centuries botanists have sought to explain why a germinating seed, regardless of the position in which it is planted, always sends it roots downwards and its stem upwards. This has been attributed to moisture, air, and light, but none of these causes explains it. Mr *Dutrochet* has planted seeds in holes which were bored in the base of a container filled with moist soil and hung this from the rafters of a room. Now one would think that the stem would have grown downwards, but this did not occur. The roots grew downwards into the air and the stems extended through the moist soil until they could penetrate the upper surface.

According to Mr Dutrochet, plants take their direction by means of an inner principle and not at all by the attraction of the bodies to which they turn. A mistletoe seed was attached to the point of a completely mobile needle fastened to a peg and was germinated; however, a small board was put in its vicinity: soon the seed directed its root to the board and reached it in five days, without the needle's having made the least movement. – Onion and leek stems with their bulbs, stored in dark places, right themselves, although more slowly than in light: they right themselves even when stored in water, which adequately demonstrates that neither air nor moisture [62] take part in their orientation.' – However, in his prize essay crowned by the French Academy of Sciences in 1839, *On Plant Circulation*[a] C. H. Schultz says that he has germinated seeds in a dark box with holes in the bottom, and caused the plants to grow in reverse orientation, crowns below and roots above, by placing a mirror to reflect the sun under the box.[91]

In the *Dictionary of the Natural Sciences*,[b] the article, 'Animals' says: 'If in their search for sustenance animals show desire and in the selection of their sustenance show the capacity for discrimination, then it can be seen that plant roots take their orientation from the direction in which the earth is richest in moisture, even seeking among rocks the smallest fissures which could contain some sustenance: their leaves and branches carefully orient toward the direction in which they find the most air and light. If a branch is bent so that the upper surfaces of its leaves are turned down, then the leaves even twist their stems in order to return to the position (i.e. smooth side up) that is most conducive to carrying out their functions. Is it known for certain that this goes on without consciousness?'

F. J. E. Meyen, who, in the 3rd volume of his *New System of Plant Physiology*,[c] 1839, has devoted a most detailed chapter, entitled 'On the Movement and Sensation of Plants', to the subject of our present consideration, says, p. 585: 'Towards summer, potatoes stored in deep, dark cellars may not infrequently be seen to shoot forth stems that always turn to the openings through which light comes into the cellar, growing long enough until they reach the place that is directly illuminated. The stems of such potatoes have been seen to be 20 feet long; whereas otherwise, even under the most favourable conditions, these plants shoot forth stems hardly 3 or 4 feet high. It is interesting to observe more precisely the path that the stem of such a potato, growing in the dark, will take finally to reach the opening through which light penetrates. The stem tries to approach the light by the shortest path; since it is not strong enough to grow straight through the air without support, it falls to the ground and creeps along a path [63] to the closest wall, which it then climbs up.' This botanist, *op. cit*, p. 576, is also led by his data to the statement that 'if we observe the free movements of algae and other lower plants, then there is likely nothing else to attribute to these creatures than a kind of *will*'.[92]

A distinct proof of the expression of will in plants is provided by the climbing plants, which, when there is no nearby support for climbing and they are seeking such support, always direct their growth to a shady location, even toward a piece of darkly coloured paper, wherever it may be placed; in contrast, they avoid glass because it shines. In the *Philosophical Transactions of 1812*, which can be found translated in *Bibliothèque Brittanique, section sciences et arts*, Vol. 52, *Thomas Andrew Knight* reports on very clever experiments in this, especially with *Ampelopsis quinquefolia*[a] – although for his part, he takes pains to explain the matter mechanically and does not want to admit that it is an expression of will. I refer to his experiments, not to his judgement. A number of unsupported climbing plants should be planted in a circle around a post to see whether all of them creep to the post centripetally. – On the 6th of November 1843 *Dutrochet* presented a paper on this subject to the Academy of Sciences,[b] 'On the spontaneous, revolving movements among plants',[c] which is well worth reading (setting aside its great prolixity) and is printed in the *Proceedings of the Sessions of the Academy of Sciences.*[d] The result is that the leaf stem of *Pisum sativum* (green peas), *Bryonia alba*[e] and *Cucumis sativus* (cucumber) bears tendrils (*la vrille*) that describe a very slow circular movement in the air, completing an ellipse in 1 to 3 hours (depending on the temperature) and thereby randomly seek fixed bodies around which, when found, the tendril wraps itself so as to bear the plant that otherwise cannot stand on its own. – In this way they do the same, only much more slowly, as the eyeless caterpillar that describes circles in the air with its upper body, seeking a leaf. – But in the aforementioned article *Dutrochet* cites much about other plant movements; e.g. the *Stylidium graminifolium*[a] in [64] New Holland has a column in the middle of the corolla that bears the anthers and stigma and which alternately bends downwards and stands up again. This is related to what *Treviranus* cites in his book *Phenomena and Laws of Organic Life*, Vol. 1, p. 173: 'in *Parnassia palustris*[b] and *Ruta graveolens*[c] the stamens incline toward one another; in *Saxifraga tridactylies*[d] they incline in pairs toward the stigma, and then right themselves in the same order.' – But concerning the above subject, shortly beforehand in the same book, he says: 'The most common of vegetative movements, which appear to be voluntary, are the attraction of branches and the upper side of leaves to light and moist heat, and the creepers' winding around a support. Especially in the last phenomenon something similar to the movement of animals is expressed. Indeed, left to itself, in its growth, the climbing plant describes circles with the tips of its branches, and by means of this type of growth it reaches an object that is nearby. Yet it is really no mere mechanical cause that brings about the adaptation of its growth to the form of the object that it reaches. The *Cuscuta*[e] winds itself not around any sort of support, not around parts of animals, dead vegetables, metal, and other inorganic material, but only around living plants and again, not around just any sort of plant, e.g. not around moss, but only around those of a kind from which it can draw appropriate sustenance through its papillae, and it is drawn to these from some distance.'[*,93] – But particularly relevant to the subject [65] is the following special observation communicated in the *Farmer's Magazine*, under the title 'Vegetable Instinct', repeated in the *Times* of 13 July 1848: 'If a dish of water is placed within 6 inches of any side of the stalk of a young pumpkin or of a large garden pea, then in the course of the night the stalk will approach the dish and in the morning the stalk will be found with one of its leaves floating in the water. This experiment can also be conducted every night until the plant begins to set fruit. – If a stick is put about 6 inches from a young *Convolvulus,*[a] then this plant will find the stick even if its position is changed daily. If the plant has wound itself around and up the stick, and it is unwound and again wound around the stick in an opposite direction, then it will return to its original position or die trying. Nevertheless, if two of these plants grow near one another without a stick around which they can wind themselves, then one of them will alter the direction of its spiral and the plants will wind themselves around one another. – *Duhamel* put some kidney beans in a cylinder filled with moist soil: after a short time they began to germinate and naturally set *plumula* upwards toward the light and *radicula* downwards into the earth. After a few days the cylinder was given a quarter turn in its circumference, and this was done again and once more until the cylinder was completely rotated. Now the beans were taken from the soil, whereupon it was discovered that with each rotation both *plumula* and *radicula* had bent in order to adapt, the former striving to climb vertically, the latter to go downwards, so that they formed a perfect spiral. But although the natural striving of roots is to go downwards, if the soil below is dry and a moist substance lies above, the roots strive upwards to reach the moist substance.’[94]

In [66] Froriep's *Notices*[b] for the year 1833, No. 832, there is a short article on plant locomotion: in poor soil near good soil, many plants will send a branch into the good soil; afterwards, the original plant withers, but the branch thrives and will now become the plant itself. By means of this process a plant has climbed down a wall.

In the same periodical, from the year 1835, No. 981, may be found the translation of a communication by Professor Daubeny from Oxford (from the *Edinburgh New Philosophical Journal*, April--June 1835) that through recent and very careful experiments it has been ascertained that the roots of plants, at least to a certain degree, have the ability to choose among the soil materials presented to their surfaces.[*,95]

Finally, [67] I will not fail to mention that Plato already attributed to plants ἐπιθυμίας, desires,[a] that is, will (*Timaeus,* p. 403 Bip. edn[b]). However, I have already discussed the teachings of the ancients on this subject in my principal work, Vol. 2, ch. 23, which is generally to be used as a supplement to the present chapter.

The hesitation and reserve we see in the above-mentioned writers as they go about attributing will to plants, when after all it makes itself known empirically, stems from the fact that they too are biased by the antiquated opinion that consciousness is the requirement and condition of will, but plants obviously have neither. It never occurs to them that will is primary, and hence is independent of cognition, which is secondary, and with which consciousness first occurs. Plants only have a surrogate for cognition, an analogue of cognition, or representation, but they actually have will itself immediately, since, as the thing in itself, it is the substrate of their, as of any, appearance. Proceeding realistically and thus starting from the objective, it can also be said that what lives and moves in plant nature and in the animal organism gradually climbs the scale of being until the light of cognition [68] immediately falls on it, presents itself as will to the consciousness which has now arisen, and then is known more immediately, and so better, than anywhere else; such cognition thus must provide the key to understanding everything lower on the scale. For in this cognition the thing in itself is no longer veiled in any other form than that of the most immediate perception.[a] It is this immediate perception of one's own willing that has been called inner sense. In itself will is without perception and remains so in the inorganic and plant kingdoms. Just as the world would remain dark despite the sun if there were no bodies there to reflect its light, or just as the vibration of a string requires air and even some kind of sounding-board in order to resonate, so will first knows itself through the appearance of cognition; cognition is, as it were, the sounding-board of will and consciousness is the tone that thereby arises. This becoming-conscious-of-itself by the will has been attributed to the so-called inner sense because it is our first and immediate cognition. Only the various impulses of one's own will can be the object of this inner sense since the process of representation cannot itself be perceived, but can only be brought to consciousness afterwards in rational reflection, this second power of representing, that is, in the abstract.[b] Therefore simple representing (intuiting) is related to actual thinking (i.e. to cognition in abstract concepts), as willing itself is related to inner awareness of willing (i.e. to consciousness). For this reason, completely clear and distinct consciousness of one’s own existence, like that of another's existence, first appears with reason (with the faculty of concepts), which as greatly elevates humans over animals as the mere faculty of intuitive representation elevates animals over plants. Now that which, like the plants, has no representation, we call ‘without consciousness’,[c] and we consider it to be hardly different from the non-existent because it actually has its existence only in the consciousness of another as another's representation. Nevertheless, the plant does not lack that which is primary in existence, will; rather, it merely lacks what is secondary; but without this it seems to us that what is primary, which is indeed the being of the thing in itself, passes over into nothing. We do not immediately [69] know how to distinguish clearly an existence without consciousness from non-existence, although deep sleep provides us our own experience with this.

If we recall from the previous chapter that among animals the cognitive faculty, like any other organ, occurs only for the benefit of the animals' preservation and thus stands precisely related in innumerable degrees to the needs of each species of animal, then we will understand that plants, since they have far fewer needs than animals, finally require no cognition at all. For this reason, as I have often said, cognition, because of the movement in response to motives that is conditional upon it, is the true character of animality that indicates its essential limit. Where this animality ceases, real cognition, whose essence is so familiar to us from our own experience, disappears, and from this point on we can only comprehend by analogy what it is that mediates[a] the influence of the external world on the movement of beings. Conversely, will – which we have recognized as the basis and the core of any being – always and everywhere remains one and the same. Among the lower levels of the plant world, just as among vegetative life in animal organisms, *stimulus* now appears as a surrogate of cognition, as the means for determining the individual expressions of this omnipresent will, and as the intermediary between the external world and the alteration of such a being; and ultimately in the inorganic world, physical effect as such takes the place of cognition; and when considered, as in this case, by proceeding from the higher to the lower levels of being, physical effect presents itself as a surrogate for cognition, and hence as its mere analogue. We cannot say that plants actually perceive light and sun, but we see that they repeatedly detect the presence or absence of these, and that they incline and turn to these; and certainly if for the most part this movement coincides with that of their growth, as does the rotation of the moon with its orbit, then the one exists no less than the other, and the direction of the former's growth is determined and systematically modified by light, just as an action is by a motive, just as the growth of the creeping and climbing plants is determined [70] by the placement and form of the supports they encounter. Thus because the plant generally does have needs, though not such as would require so much as a sensorium and intellect, some sort of analogue must take their place in order to make will effective, if not to seek, at least to seize such satisfaction as is offered it. Now this is receptivity for a *stimulus*, which is different from cognition, I would say, in that with cognition the motive presented as representation and the resulting act of will *remain distinctly separated from one another*, and indeed the more perfect the intellect, the more distinct the separation – in contrast, with mere receptivity for a stimulus, the receptivity is no longer readily distinguished from the willing occasioned by it, and the two fuse into one. Finally in inorganic nature, even a receptivity for stimuli, a receptivity unmistakably analogous to cognition, ceases; however, there remain various reactions of each body to various influences; these now present themselves as surrogates for cognition, in the descending path of observation from higher to lower levels. If a body reacts differently, then the influence must also be different and must evoke a different affection in the body, which, for all its dullness, is still distantly analogous to cognition. Thus, e.g., if water is dammed up and finally finds a breach, which it eagerly uses, rushing tumultuously down, then certainly it does not recognize the breach any more than the acid perceives the added alkali for which it abandons the metal, or the scrap of paper perceives the amber to which it springs; but nonetheless we must admit that what occasions such sudden changes in all these bodies must always have a certain similarity with that which happens in us when an unexpected motive appears. Earlier I used observations of this type to demonstrate *will* in all things; however, now I cite these observations in order to indicate the sphere to which *cognition* belongs when it is considered, not as is usual, from within, but when it is considered realistically from a standpoint lying external to itself as something foreign, thus gaining for it the objective [71] point of view that is of greatest importance for supplementing the subjective.[*] We then see that cognition presents itself as the *medium of motives*, i.e., as the medium of causality upon cognizing beings, and thus as what receives the external alteration from which internal alteration must follow, that is, as the intermediary between the two. Now the *world as representation* is poised[a] on this narrow line, i.e., this whole corporeal world, extended in space and time, the world which, *as such*, can never be present except in brains,[b] no more than dreams, which, for a while, exist in just the same way.[96] As the medium of motives, what cognition does for animals and humans, receptivity for stimuli does for plants, and receptivity for all sorts of causes does for inorganic bodies; put precisely, all these are simply differences of degree. For, solely as a consequence of this, among animals receptivity for external impressions enhances in proportion to their needs until a nervous system and brain must develop, and as a function of this brain consciousness arises, and in consciousness the objective world arises, the forms of which (time, space, and causality) are the way this function is carried out. Thus we find that cognition is originally calculated solely for the subjective, determined simply for the service of will, hence, it is of a quite secondary and subordinate form, indeed, as if appearing only accidentally[a] as a condition of the effects of mere motives – instead of stimuli – that became necessary at the level of animality. The image of the world in time and space arising on this occasion is merely the scheme by which motives present themselves as ends; it also conditions the spatial and causal connections among intuited objects; nonetheless, it is merely that which mediates between motive and act of will. What a leap it would be to regard this image of the world, arising in such a way, accidentally, in intellect, i.e., in the brain function of animal beings, the image by which the means to their ends present themselves, so as to light up the path of such an ephemeral being upon its [72] planet – to regard this image, I say, this mere phenomenon of the brain, as the true, ultimate being of things (thing in itself) and to regard the concatenation of its parts as the absolute world order (relations of the thing in itself) and to accept that all of that would also exist independently of the brain! Here this assumption must appear to us as rash and presumptuous to the greatest degree, and yet it is the foundation on which all systems of pre-Kantian dogmatism were built since it is the tacit presupposition of all their ontology, cosmology, and theology, and all the eternal truths[b] to which they then refer. But this leap has always been made tacitly and unconsciously: to have brought it to consciousness is exactly Kant's immortal achievement.[97]

At present, through our realistic way of looking at things, we thus unexpectedly achieve the *objective point of view* for *Kant's* great discoveries and by way of empirical and physiological observation come to the point from which his transcendental--critical philosophy proceeds. This philosophy takes the *subjective* as its standpoint and considers consciousness as a given, but from consciousness itself and its *a priori* given lawfulness it achieves the result that what occurs in consciousness can be nothing more than mere appearance. In contrast, from our realistic, external standpoint, which takes the *objective*, the natural being, as that which is simply given, we see what intellect is as to its end and origin, and to which class of phenomena it belongs; from this we recognize (to this extent *a priori*) that it *must* be limited to mere appearances, and we see that what presents itself in intellect can at all times only be something primarily conditioned *subjectively*; that is, along with the order of the nexus[a] of its parts, which are likewise subjectively conditioned, it can only be a world as phenomenon,[b] but there can never be knowledge of things as they are in themselves and how they might be connected. Specifically, in the nexus[c] of nature we have found the cognitive faculty to be something conditioned, whose pronouncements for just this reason cannot have unconditional validity. After the study of the *Critique of Pure Reason*, which is essentially foreign to our standpoint, it must nonetheless appear to those [73] who understand it as if nature has intentionally determined intellect to be a distorting mirror playing hide-and-seek with us. But now we follow our realistic--objective method, i.e., proceeding from the objective world as a given, arriving at the same result as Kant arrived at in his idealistic--subjective method, i.e., by observing intellect itself as it constitutes consciousness, and this has shown us that the world as representation is poised on a narrow line between external cause (motive) and the elicited effect (act of will) in cognizing (animal) beings, in which there first begins the clear separation between the two. Thus one thing casts light on another.[d] Having now been attained by two completely opposite methods, having been illuminated from two sides, Kant's great result becomes quite distinct for the first time, and its complete meaning becomes clear. Our objective standpoint is a realistic one and thus is conditioned, since it accepts the beings of nature as given, and in the process overlooks that their objective existence presupposes an intellect in which they are first found as representations, but *Kant's* subjective and idealistic standpoint is similarly conditioned, since he starts with intellect,[e] which itself certainly presupposes nature insofar as intellect can only occur as a result of the development of nature to the level of animal beings. – If we firmly maintain this realistic--objective standpoint of ours, we can also characterize *Kant's* theory as follows: according to *Locke*, in order to know things in themselves through things as they appear, we have to remove the contribution of the sensory functions (given the name secondary qualities); *Kant*, with infinitely greater profundity, removed the incomparably more considerable contribution of the brain functions (which includes exactly *Locke's* primary qualities).[98] But here I have only shown why all this must be so, since I indicated the place that intellect occupies in the nexus of nature if one proceeds realistically from the objective as given, but in doing so takes the will that is uniquely present to consciousness with complete immediacy, this genuine place to stand[a] for metaphysics, for one's point of support, as that originally real thing of which everything else is only appearance. The following serves to supplement this.

I [74] mentioned above that where cognition takes place, the motive appearing as representation and the act of will following from it *remain more distinctly separated from one another* the more perfect the intellect, that is, the higher we climb the scale of beings. This requires a more precise explanation. Where mere stimulus incites the activity of will and no representation occurs, as with plants, receiving the impression is still not at all separate from being determined by it. Among the lowest of all animal intelligence, among radii, rotifers, acephela, and the like, it is hardly different: a feeling of hunger, an attentiveness incited by it, a perception of prey and the capture that follows, here constitute the whole content of consciousness, but this is nonetheless the first dawning of the world as representation, the background to which, i.e., everything except the motive effective at a given time, still remains completely dark here. Correspondingly the sense organs are also highly imperfect and incomplete since they have to deliver only the most meagre data for intuition to an embryonic understanding. However, wherever there is sensibility, an understanding already accompanies it, i.e., the capacity to refer the experienced effect to the external cause; without this, sensibility would be superfluous and only the source of meaningless pains.[99] Higher up the scale of animals, increasingly more perfect senses appear until all five exist, which first occur among a few invertebrates, but fully occur only in vertebrates. The brain and its function, the understanding, develop in the same way; the object presents itself more distinctly and completely, as already standing in connection with other objects, because for the service of will the relationships of objects have to be grasped, and through this the world of representation acquires some scope and background. But apprehension[b] goes only so far as is required for the service of will: perception and the appeal to interest[c] are not clearly separated in this, but the object is apprehended[d] only insofar as it is a motive. Even the most intelligent animals see in the object only what concerns them, i.e., what has reference to their will or in any case what can have such reference in the future, as in this regard, [75] e.g., cats strive to acquire precise knowledge of their locale and a fox sniffs out the hiding places of future prey. But to everything else they are unreceptive. Perhaps an animal never gazed at the starry heavens: my dog leapt up in alarm when it accidentally caught a glimpse of the sun for the first time. Among the most intelligent and trained animals there appears the first feeble trace of a disinterested apprehension of their environment: dogs convey this by staring; they can be seen in the window attentively gazing at everything going on before them; sometimes apes look around as if they were trying to make sense of their environment. It is in human beings that motive and actions, representations and will, first appear completely distinct from one another. But this does not immediately set aside the subservience of intellect to will. Common people quite distinctly apprehend only the things that have some sort of direct or indirect reference to themselves (interest to them); the dullness of their intellects for everything else cannot be overcome; therefore, it remains in the background, never coming to consciousness with full, radiant distinctness. For them, philosophical astonishment and artistic inspiration remain forever foreign, whatever else they might do; to them everything seems fundamentally self-evident. Complete detachment and separation of intellect from will and from its service is the privilege of genius, as I have already shown in detail in the aesthetic part of my work.[a] Genius is objectivity. Pure objectivity and distinctness with which things are presented to intuition (this fundamental and content-rich cognition) actually stand at each moment in inverse relation to the interest will takes in the same things, and will-less cognition is the condition, indeed the essence of all aesthetic apprehension. Why does a common painter, despite all efforts, portray the landscape so badly? Because he does not see it as any more beautiful. And why does he not see it as any more beautiful? Because his intellect is not sufficiently separated from his will. The degree of this separation indicates great intellectual differences among humans, for the more cognition is freed from will, the more pure and, as a result, more objective and correct [76] it is, just as that fruit is best which does not taste of the soil in which it is grown.

This relation, as important as it is interesting, deserves our raising it to greater distinctness by reflecting on the whole scale of being: we picture the gradual transition from the unconditionally subjective to intellect's highest degree of objectivity. Thus inorganic nature is unconditionally subjective, as in it there exists absolutely no trace of consciousness of the external world. Stones, boulders, or ice-floes, even when they collide or strike and shear one another, have no consciousness of one another nor of an external world. However, they undergo an external influence in proportion to which their position and motion alters, and thus, they can be considered as the first step toward consciousness. Now although plants, too, have no consciousness of the external world, the mere analogue of consciousness present in them is to be thought of as an obscure self-enjoyment; thus, we see that they all seek light, and many of them diurnally rotate their flowers or leaves towards the sun; vines creep up to a support not contacting them, and finally, individual species even express a form of irritability; thus, there indisputably exists a connection and relation between their movements and their environment, even when it does not immediately contact them, which as a result we must call a feeble analogue of perception. With animality, a definite perception first appears, i.e., consciousness of other things in contrast to a distinct self-consciousness that first arises with it. The character of animality consists just in this, in contrast to the nature of plants. In the lowest classes of animals consciousness of the external world is very limited and dull: it becomes more distinct and extensive with increasing degrees of intelligence, which are still directed to the degrees of animals' needs; and so it goes along the entire ascending scale of animals up to the human, in whom consciousness of the outer world reaches its pinnacle and accordingly the world presents itself more distinctly and completely than anywhere else. [77] But even in this case clarity of consciousness has innumerable degrees, namely from the dullest, empty mind to the genius. Even among average minds, objective perception of external things always has a considerably subjective tinge: cognition still altogether bears the character that exists merely for the assistance of willing. The more eminent the mind is, the more it loses this, the object releases itself more and more from the subject, and so the more the external world presents itself as purely objective, until ultimately, in the genius, it reaches complete objectivity,[100] by virtue of which the Platonic ideas of individual things separate out from those things because the mind that apprehends them rises to the level of pure subject of cognition. For since intuition is the basis of all cognition, all thinking and all insight can be traced to the fundamental distinction in the quality of it, from which arises the complete difference between the common mind's and the eminent mind's entire method of apprehension, a difference that can be noticed at every opportunity, and thus can also be seen in dull, ordinary minds that cognize merely for the benefit of willing, even approaching the seriousness of animality, in contrast to the constant play of the surfeit of cognition that enlivens the consciousness of superior minds. – The hyperbolic[101] German expression *Klotz* (as applied to human beings), ‘blockhead’ in English, appears to result from consideration of the two extremes of the great scale depicted here.

Yet another consequence of the distinct separation of will from intellect that first occurs in humans, and consequently of the distinct separation of motive from action, is the deceptive illusion[a] of a freedom in individual actions. In the inorganic case where causes evoke the effect and in the vegetative where stimuli do so, because of the simplicity of the causal connection, there is not the least illusion of freedom. But with animal life what was cause or stimulus up to this point now occurs as motive, hence now there exists a second world, that of representation, and the cause lies in one realm, the effect in another, so the connection between the two, and with it necessity, is no longer so apparent as it was in the inorganic and vegetative. Meanwhile among animals, for which mere intuitive representation is a middle ground between [78] organic functions resulting from stimuli and the deliberate actions of humans, necessity is always unmistakable: with the presence of intuitive motives, the actions of animals are inevitable when there is not an equally intuitive counter-motive, or training, to work against the motive, and yet the animal's representation is already separate from the act of will and occurs for it only in consciousness. But in humans representation has risen even to concepts, and now they carry a wholly invisible world of thought, providing motive and counter-motive for their actions and making them independent of the present and intuitive environment, so this connection can no longer be observed from without and is knowable even from within only through abstract and mature reflection. For, when observed from without, any motivation through concepts impresses the stamp of premeditation on human movements, whereby they gain a semblance of independence that apparently differentiates them from those of animals; however, fundamentally these movements only furnish evidence that humans are actuated[b] by a species of representations which animals do not share; and in self-consciousness the act of will is recognized in the most direct way, but in contrast the motive is mostly recognized quite indirectly and often even intentionally and carefully veiled to prevent self-knowledge.[102] Thus this process, in conjunction with consciousness of that genuine freedom that is attributed to will as thing in itself and is outside of appearances, produces the deceptive illusion that even the individual act of will depends on absolutely nothing and is free, i.e., is groundless, while in truth, with a given character and cognized motive, it still follows with just as strict necessity as alterations which the laws of mechanics teaches, and to use *Kant's* expression, if character and motive were precisely known, then it could be calculated as certainly as a lunar eclipse, or, to call on a quite different authority as well, as is stated by *Dante,* who is older than Buridan:

> Between two foods, distant and appetizing
> in equal measure, a free man would die of hunger 79
> before he would bring one of them to his teeth.[a]

a *histoire des progrès des sciences naturelles depuis 1789 jusqu' à ce jour*

a [likely the genus *Mimosa*, still commonly called 'sensitive plants']

b [The leaves of the *Hedysarum gyrans* (now *Codariocalyx motorius*) known as the 'telegraph' or 'semaphore' plant, perceptibly rotate]

c [Here, as generally, Schopenhauer translates French material he quotes into German; we translate Schopenhauer's German]

d [Here, as generally, Schopenhauer translates English material he quotes into German]

e *Mémoire de l'académie des sciences de l' année 1821*

a *sur la circulation dans les plantes*

b *Dictionn*[*aire*] *d*[*es*] *sciences naturelles*

c *Neuen Systems der Pflanzenphysiologie*

a [woodbine]

b *académie des sciences*

c *sur les mouvements révolutifs spontanés chez les végétaux*

d *Comptes rendus des séances de l' Acad*[*émie*] *d*[*es*] *Sc*[*iences*]

e [white bryony; a European climbing vine]

***** In *On Life and Polarity*, 1836, p. 88, *Brandis* says, 'The roots of rock plants seek nutritious mould in the finest crevices of rocks. The roots of plants densely cluster around a nutritious bone. I saw a root that was hindered from further growth into the ground by the sole of an old shoe; it divided itself into as many fibres as the sole of the shoe had holes through which it had previously been stitched; as soon as these fibres had overcome the obstacle and had grown through the holes, they reunited as a single root.' On p. 87 he says, 'If Sprengel's observations are corroborated, even mediated relations are perceived by plants in order to attain this end (fructification): specifically, the anthers of the *nigella* [black caraway] bend down in order to bring its pollen onto the back of a bee, and then, in the same way, the pistil bends down in order to take up the pollen from the back of the bee'

a [grass triggerplant, a proto-carnivorous plant]

b [marsh grass-of-Parnassus or arctic grass-of-Parnassus]

c [common rue, a perennial historically used for medicinal purposes]

d [three-fingered saxifrage]

e [dodder]

a [bindweed]

b *Notizen* [*aus dem Gebiete der Natur- und Heilkunde*, 1821–36]

* Finally there belongs here a quite different discussion by the French academic, *Babinet*, in an article on seasons on the planets, which can be found in the *Review of the Two Worlds* [*Revue des deux Mondes*] of 15 January 1856, and from which I will repeat in German that which is most important. The intent of this article is actually to reduce to its proximate cause the well-known fact that cereals only thrive in the most temperate climates: ‘If grain did not necessarily die over the winter, but were a perennial plant, then it would not bear ears, and hence there would be no harvest. In the warm lands of Africa, Asia, and the Americas, where no winter kills the cereals, the plants live as long as does grass here: they multiply through shoots, always remain green, and form neither ears nor seeds…In contrast, in cold climates the plant organism seems by means of an inconceivable miracle to sense ahead of time the necessity to go through a seed phase in order not to die out completely in the cold season. (*L’organisme de la plante,* par un inconcevable miracle*, semble présentir la nécessité de passer par l’état de graine, pour ne pas périr complètement pendant la saison rigoureuse*)…Similarly, some regions in the tropics, e.g., Jamaica, have a ‘dry season’, i.e., a time when all plants wither; here at the approach of the season during which they must wither, from the same organic presentiment (*par le même* présentiment organique) plants hurry to produce seed in order to reproduce.’ In the fact described by the author as an ‘inconceivable miracle’, we recognize an expression of the will of the plant at a higher power [*Potenz*], since it appears here as the will of the species and, in a way analogous to the instincts of many animals, makes preparation for the future without thereby being guided by a cognition of the future. Here we see plants in warmer climates dispense with extensive arrangements which a cold climate had made necessary for them. Animals do just the same in similar cases, even bees; as Leroy reports in his excellent book *Lettres philosophiques sur l'intelligence* [*et la perfectibilité*] *des animaux* [*Philosophical Letters on the Intelligence and the perfectability of Animals*] (in the 3rd letter, p. 231), in the first year they were taken to South America, bees gathered honey and built their cells as

they did in their native land, but when they gradually became aware that here plants bloom all year long, they gave up their work. – In the *aphids*, long famous for their anomalous reproduction, the animal kingdom provides a fact analogous to the change in the way grains reproduce. As is well known, female aphids reproduce for 10–12 generations without fertilization, and even through a variation on the ovoviviparous process. This goes on throughout the summer, but in the autumn the males appear, mating takes place, and eggs are laid as winter quarters for the whole species, since only in such form can they endure the winter

a *Begierden*

b [77b]

a *Wahrnehmung*

b *in abstracto*

c *bewußtlos*

a *das Vermittelnde*

***** Cf. *The World as Will and Representation*, Vol. 2, ch. 22: ‘Objective View of the Intellect’

a *schwebt*

b *in Gehirnen*

a *per accidens*

b *aeternarum veritatum*

a *Nexus*

b *mundus phaenomenon*

c *Zusammenhange*

d *Ita res accendent lumina rebus.* [Lucretius, *On the Nature of Things*, I, 1109]

e *Intelligenz*

a ποῦ στῶ

b *Apprehension*

c *Sollicitirtwerden*

d *aufgefaßt*

a [*WWR* I, Book 3; II, chs. 29–39]

a *täuschende Schein*

b *aktuirt*

a *Intra duo cibi, distanti e moventi*

D'un modo, prima si morrìa di fame,

Che liber' uomo l'un recasse a' denti

[Dante Alighieri, ‘Paradise’, *Divine Comedy* IV, 1. In a footnote, Schopenhauer provides a German prose translation of the Italian verse]

[80] Physical astronomy

For no part of my theory was I entitled to have less hope for a corroboration from the empirical sciences than that part which applies to inorganic nature the fundamental truth that Kant's thing in itself is will, and presents what is active in all nature's fundamental forces as simply identical with what we know in ourselves as will. – I have been all the more pleased to see that an extraordinary empiricist, overcome by the power of truth, has come to pronounce this paradoxical proposition in the context of his science. This is *Sir John Herschel*, in his *Treatise on Astronomy*, which appeared in 1833 and in 1849 has been published in a second, expanded edition under the title *Outlines of Astronomy*.[103] As an astronomer who knows gravity not merely from the one-sided and really crude role it plays on earth – but from the more genteel role that devolves on it in the universe, where planets play with one another, betraying attraction, as if flirting, but not going so far as crude groping, and instead maintaining their proper distance as they continue to dance their minuet decorously to the harmony of the spheres – thus in the 7th chapter, where he arrives at the statement of the law of gravity, p. 371 of the first edition, *Sir John Herschel* declares:[a]

‘All bodies with which we are acquainted, when raised into the air [81] and quietly abandoned, descend to the earth's surface in lines perpendicular to it. They are therefore urged thereto by a force or effort, the direct or indirect result of a consciousness and a *will* existing somewhere, though beyond our power to trace, which force we term *gravity*.’[*],[104]

As an Englishman who above all is concerned that the Mosaic account (which lies closer to his heart than any insight or truth in the world) not be imperilled,[105] Herschel's reviewer in the *Edinburgh Review*, October 1833, taking great offence at this passage, correctly notes that apparently here it is not a question of the will of almighty God who has called into being matter with all of its properties, but absolutely does not want to give credence to the statement and denies that it follows from the preceding paragraph, by which Herschel wished to establish it. I am of the opinion that the statement would certainly follow from this (because the source of a concept [82] determines its content), but that the premise itself is false. For it is the assertion that the source of the concept of causality is experience, and moreover the experience that we produce while we affect the bodies of the external world through our own effort.[a] Only where the day of Kantian philosophy has not yet dawned, as in England, could the origin of the concept of causality be thought of as deriving from experience (except among professors of philosophy who throw Kant's theories to the winds and consider me not worth their attention);[106] however, least of all could one think so if one knows my proof of the apriority of this concept, a proof that is completely different from Kant's and based on the fact that knowledge of causality is the necessary prerequisite of intuition of the external world itself, which comes to be as the understanding makes a complete *transition* from sensation in the sense organ to its *cause*, with the cause now presenting itself as an *object* in space, which itself is intuited *a priori*. Since intuition of objects must precede our conscious effect on them, experience cannot be the source of the concept of causality: for before I act on things, they must have acted on me as motives. I have thoroughly discussed everything relevant to this in the 2nd volume of my principal work, ch. 4, pp. 38–42 and in the 2nd edition of the treatise on the principle of reason, 21, wherein, on p. 74,[a] the assumption adopted by *Herschel* is specifically refuted; thus, here I need not go into it anew.[107] But such an assumption can even be refuted empirically in that it would follow from this assumption that a human being born without arms and legs would have no knowledge of causality, and, hence could not gain any intuition of the external world; however, nature has factually refuted this by means of an unfortunate case of this sort which I have reproduced from the source in the chapter of my principal work which I just cited, p. 40.[b] – Herschel's claim, which is in question here, could again be a case in which a true conclusion was drawn from false premises; this always occurs when we immediately [83] see a truth through a correct insight,[c] but fail to find out its grounds and make them distinct so that we are not able to be fully aware of them. For with any original insight conviction comes prior to proof, which is devised afterwards.

Because all of its parts can be displaced, fluid matter makes immediate expression of gravity more obvious than can solid matter. Therefore, in order to share in the above insight,[d] which is the true source of the Herschelian claim, carefully observe how powerfully a stream falls over rock masses, and ask yourself whether such decided striving, such raging, can go on without effort and whether an effort can be thought of without will. And in just the same way whenever we become aware of something originally moved by an immediate, primary force, we are compelled to think of its inner essence as will. – This much is certain: that here *Herschel*, like all the above-mentioned empiricists of different specialties, had been led by his investigation to the boundary where the physical has behind it only the metaphysical, which brings him to a stop; and that he too, like all of these empiricists, could see only *will* on the other side of the boundary.

Moreover, like most of those empiricists, Herschel here labours under the opinion that will is inseparable from consciousness. Since above I have sufficiently spoken my mind about this error and corrected it with my theory, it is unnecessary to go into this anew.[108]

Since the beginning of this century there have been those who have wanted to attribute *life* to the inorganic, but quite falsely. ‘Alive’ and ‘organic’ are convertible concepts, and with death the organic ceases to be organic.[109] But in all of nature no boundary is so sharply drawn as that between the organic and inorganic; i.e. between that in which form is essential and permanent, matter is accidental and changeable – and that to which exactly the reverse applies. Here the boundary does not fluctuate, as perhaps it does between animals and plants, between solids and liquids, gases and vapours; thus to want to suspend this boundary means intentionally to confuse concepts. [84] In contrast, I was the first to say that a *will* is to be attributed to the inanimate, the inorganic. Since for me, unlike with previous opinions, will is not an accident of cognition and hence of life, but life itself is appearance of will. On the contrary, cognition is actually an accident of life and life is an accident of matter. But matter is merely the perceptibility of the appearances of will. Therefore *willing* is to be recognized in any striving[a] that proceeds from the nature of a material being and that genuinely constitutes this nature, or manifests itself as appearance[b] through this nature, and hence there is no matter without expression of will.[c] The lowest and therefore most universal expression of will is gravity, so it has been called a fundamental force essential to matter.[110]

The usual view of nature assumes that there are *two* fundamentally different principles of movement, that movement of a body could have *two types of origin*, namely that it either proceeds internally, when it is attributed to *will*, or externally, in which case it arises through *causes*. This fundamental view is usually assumed to be self-evident and only occasionally expressly emphasized: still, for the sake of total certainty, I want to cite some passages where this contrast occurs, from the most ancient to the most recent times. *Plato*, in the *Phaedrus* (p. 319 Bip. edn) already posits the contrast between that which is moved internally (soul) and that which receives motion externally (bodies) – τὸ ὑφ᾽ ἑαυτοῦ κινουμένον· καὶ τὸ, ᾧ ἔξωθεν τὸ κινεῖσθαι.[d] And in the 10th book of *The Laws* (p. 85)[e] we again find the same antithesis. – After him, *Cicero* repeated it in the last two chapters of *Scipio's Dream.*[f,111] *Aristotle* advances the same principle in *Physics* VII, 2: 'everything in motion is either moved by itself or by another.'[g] In the book that follows, chs. 4 and 5, he returns to the same contrast in connection with detailed inquiries, during which he is led into great confusion as a result of the falsity of the contrast. [85] MacLaurin, too, in his *Account of Newton's Discoveries*,[a] p. 102, presents this fundamental view as his starting point.[112] – And still more recently, *J. J. Rousseau* very naïvely and artlessly comes close to the same contrast in the famous profession of faith of the Savoyard priest[b] (that is, in *Emile*, IV, p. 27, Bip. edn): 'In bodies I observe two types of motion: communicated motion and spontaneous or voluntary motion: in the first case the cause that moves is foreign to the body that is moved; in the second, the cause dwells in the body itself.'[c] – But even in our times, and in their bombastic, turgid style, *Burdach* opines as follows (*Physiology*, Vol. 4, p. 323[d]): 'the ground of determination of a movement lies either within or without that which moves. Matter is external existence, has forces of motion, but puts these into effect only in accord with certain spatial relations and external oppositions; only the soul is always internally active, and only bodies with souls find the occasion for motion in themselves, independent of external mechanical relations, and move themselves of their own power.'[113]

But here I must say, as Abélard once said, 'although all the church fathers say so, I do not say so',[e] for no matter how old and universal this fundamental view might be, in contrast my theory has it that there are *not* two fundamentally different origins for movement, that movement does *not* either proceed from within, where it is attributed to will, or without where it arises from causes; rather, that the two are inseparable and with each movement of a body both take place simultaneously. For movement admittedly arising from *will* always presupposes a *cause*; for cognitive beings this cause is a motive; yet without a cause movement is impossible, even in this case. And conversely, the movement of a body admittedly from an external *cause* is in itself certainly an expression of its *will*, an expression which is merely evoked by the cause. Hence there is only a single, uniform, universal principle of all movement, one [86] without exception: its internal condition is *will*; its external occasion is *cause*, which, depending on the nature of what is moved, can occur in the form of a stimulus or a motive.

Everything that is known of things only empirically, only *a posteriori*, is in itself *will*; in contrast, as far as things are determinable *a priori*, they belong solely to *representation*, to mere appearance. Therefore the intelligibility of natural phenomena[a] decreases in proportion as will manifests itself more and more distinctly in them, i.e., as they stand higher and higher on the scale of being; in contrast, they are more readily intelligible, the less their empirical content is, because they remain all the more in the realm of mere *representation*, whose forms, known to us *a priori*, are the principle of intelligibility. Accordingly things are completely, thoroughly comprehensible so long as one keeps entirely to this realm; that is, so long as one has before oneself mere representation, without empirical content, mere form; thus in the *a priori* sciences, in arithmetic, geometry, phoronomy, and in logic, everything is comprehensible to the highest degree: insights are completely clear and satisfying and leave nothing to be desired in that it is just impossible for us to think that something could be otherwise; all this comes from our being concerned with only the forms of our own intellect.[114] Thus the more intelligibility there is in a relation, the more it consists in mere appearance and does not concern the essence in itself.[115] Applied mathematics, that is, mechanics, hydraulics, etc., concern themselves with the lowest levels of the objectivation[b] of will, most of which lies in the realm of mere representation, but still has an empirical element in which complete comprehensibility, transparency, becomes opaque and in which that which is inexplicable appears. For the same reason, only some parts of physics and chemistry still admit mathematical treatment; higher up the scale of being this completely disappears precisely because the content of the appearance outweighs the form. This content is will, the *a posteriori*,[c] the thing in itself, that which is free, that which is groundless. Under the heading 'Plant physiology' I have shown how among living and cognizing beings the motive and the act of will, [87] the representing and willing, split apart more and more distinctly and separate from one another the higher one ascends on the scale of being. Now in the same way, in the inorganic realm, cause increasingly separates from effect as the purely empirical (which is just the appearance of will) appears more distinct; but at the same time, intelligibility decreases. This deserves a detailed discussion, to which I ask my reader to give his undivided attention, since such a discussion is especially suited to cast the brightest light of both comprehensibility and evidence on the fundamental ideas of my theory. In this, however, consists all that I am able to do; in contrast, I am not able to make my contemporaries more ready to welcome ideas than verbiage, but I only console myself that I am not a man of my times.

At the lowest levels of nature, cause and effect are quite homogeneous and proportionate, which is why we most thoroughly understand the causal connection here: e.g. the cause of movement of a ball which is struck is that of another ball, which loses just as much motion as the first receives. Here we have the greatest possible comprehensibility of causality. The mystery in this is limited to the possibility of the transmission of motion – of something incorporeal – from one body to another. In this case, the receptivity of bodies is so insignificant that the effect to be produced must completely transfer from the cause. The same applies to all purely mechanical effects, and if we do not comprehend them all instantaneously, this is simply because circumstances surrounding the effects obscure them from us or the complicated connection of many causes and effects confuses us; in itself, mechanical causality is at all times readily comprehensible, indeed in the highest degree, because here cause and effect are not *qualitatively* distinct, and where they are *quantitatively* so, as with the case of the lever, the matter can be made clear from mere spatial and temporal relations. However, as soon as weights become involved, a second mysterious thing enters in, the force of gravity;[a] if elastic bodies operate, then elasticity, too. – It is quite different when we ascend the scale of appearances [88] a bit. Heating as cause, and expansion, liquefaction, evaporation, or crystallization as effect are not homogeneous; therefore, their causal connection is not intelligible. The comprehensibility of causality has ceased: what became liquid through a little heat is evaporated by an increase in heat; what crystallizes at a lower level of heat, is melted at a greater level. Heat makes wax soft, clay hard; light turns wax white, silver chloride black. And still further, when two salts decompose one another, forming two new ones, then the elective affinity is to us a profound mystery, and the properties of the two new bodies are not the combination of the properties of their separate constituents. However, the combination from which the new bodies arise can still be traced and demonstrated, and that which was combined can be separated again, thereby restoring the same quantity. Thus between cause and effect here a marked heterogeneity and incommensurability have occurred; causality has become mysterious. Both are all the more so when we compare the effects of electricity or of voltaic piles with their causes, with rubbing of glass or stratification and oxidation of plates. Here all similarity between cause and effect already disappears: causality covers itself with a dense veil that men like Davy, Ampère, Faraday have made the most strenuous efforts to lay bare to some extent. Only the *laws* of the mode of effect can still be observed, and communication, distribution, shock, ignition, decomposition, charge, insulation, discharge, electrical current, etc. can be brought under a scheme, such as $+E$ and $-E$, to which we reduce and direct the effect as we please, but the process itself remains an unknown, an x. Thus here cause and effect are completely heterogeneous, their connection unintelligible, and the bodies show great receptivity for a causal influence, the essence of which remains for us a secret. Also as we ascend higher on the scale of appearances, more seems to lie in the effect and less in the cause.[116] Thus all of this is even more the case when we ascend to the organic kingdoms, where the phenomenon[a] of life is apparent. When, as is common in China, a pit [89] is filled with rotting wood and this is covered with leaves of the same tree and a saltpetre solution is repeatedly poured on it, an abundant crop of edible mushrooms grows. Some hay moistened with water provides a world of fast-moving infusoria. Here the effect and cause are very heterogeneous, and so much more seems to lie in the former than in the latter![117] Between the seed, a century old, indeed millennia old, and the tree, between the soil and the specific, highly varied sap of countless plants

– wholesome, poisonous, nourishing, borne by *one* soil, shone on by *one* sunlight, watered by *one* rain – for us there is no longer similarity and therefore no intelligibility. For causality here occurs at a higher potency, namely, as stimulus and receptivity for stimulus. Only the schema of cause and effect remains for us; we recognize this as cause, that as effect, but absolutely nothing of the manner of causality. And we find no similarity between the cause and the effect, but also no quantitative relation: more and more the effect appears more observable than the cause;[118] then, too, the effect of a stimulus does not increase in proportion to its intensity; often it is the reverse. But if now we enter the realm of *cognizing* beings, then between the action and the object that, as representation, evokes such an action, there is neither any similarity nor relation. Meanwhile with animals limited to *intuitive* representation the *presence* of the object that works as motive is still necessary, but the motive then works instantaneously and inevitably (setting aside training, i.e., habit enforced by fear), for animals cannot have a concept that would make them independent of present impressions, that would give them the possibility of reflection and would make them capable of intentional action. Humans can do this. Thus when it finally comes to rational beings, motives are no longer something present, intuitive, proximate, real, but just concepts present in the brain of the one acting, drawn from all kinds of intuitions from previous years' experience, or even communicated verbally. The [90] separation between cause and effect has become so great, and compared to cause, effect has grown so great,[119] that to the uneducated, since absolutely no cause appears to be present, the act of will seems to depend on nothing, to be groundless, i.e., free. For this reason, if we reflectively view[a] the movements of our body from the outside, they present themselves as something that just happens without cause, i.e., actually as a miracle. Only experience and reflection[b] teach us that these movements, like all others, are possible only through a cause, here called a motive, and that in each gradation, the cause lags behind the effect only in material reality; whereas, in dynamic reality, in energy, it keeps pace with the effect.[120] – Thus at this level, the highest in nature, the intelligibility of causality forsakes us more than anywhere else. Only the mere schema, taken universally, remains, and it requires mature reflection to recognize here too the applicability and necessity that this schema everywhere entails.

But just as in the Grotto of Posilippo, where one goes farther and farther into the darkness until, once one has gone past the mid-point, daylight from the other end begins to illuminate the path again – here, too, after the outwardly directed light of understanding, with its form of causality, has more and more been overcome by darkness until it ultimately casts only a weak and uncertain glimmer, just then, an enlightenment of a completely different sort, from a completely different side, out of our own inner being, comes to meet it through the fortuitous circumstance that we, the ones judging, are ourselves the object here to be judged. For external intuition and the understanding active in it, the intelligibility of the causal connection – so clear at the outset – gradually became so difficult that finally in animal actions the causal connection almost became so doubtful that it could even be viewed as a kind of miracle; but just then, from a completely different side – from the observer's own self[c] – came the immediate lesson that will is the agent[d] in every action – will, which is more familiar [91] and more trustworthy to the observer than anything that external intuition could ever provide. For the philosopher this cognition alone must become the key to insight into the interior of all natural processes that occur without cognition, those processes for which the causal explanation was indeed more satisfying than for the ones last observed, and all the clearer, the further they lie from those last observed, but which even there left over an unknown *x*, and could never fully illuminate the interior of these processes, not even for those bodies struck by another or drawn down by gravity. This *x* has extended itself farther and farther, and finally, on the highest levels, has completely repressed the causal explanation; but then, when causal explanation could achieve very little, this *x* reveals itself as *will* – like Mephistopheles, who appears under scholarly attack out of a poodle grown colossal, whose core he was.[a,121] As a consequence of the observation worked out here, it is quite unavoidable that we recognize *the identity of this x*, even at the lowest levels, where it appeared only feebly, then at the higher levels, where it extended its obscurity more and more, finally in the highest, where it overshadows everything, and ultimately at the point at which, in our own appearance, it becomes manifest to self-consciousness as will.[b] At this point the two originally different[c] sources of our cognition, the outer and the inner, must be connected through reflection. Comprehension of nature and that of our own self arises solely from this connection: but then the interior of nature is disclosed to our intellect, to which on its own only the exterior is otherwise accessible, and the secret that philosophy has so long sought is revealed. For then it becomes clear what actually the real is and what the ideal is (the thing in itself and appearance), and then the primary question around which philosophy since Descartes turns, is settled: the question as to the relation between these two, whose totally diverse nature[d] Kant had shown in the most fundamental way, with unmatched profundity, and whose absolute identity windbags asserted straight afterwards on the credit of intellectual intuition. If on the contrary, one evades the insight that is actually the sole and narrow portal to the truth, then one will never comprehend the [92] inner being of nature, to which there is absolutely no other path; rather,[122] one will henceforth fall into impenetrable error. Specifically, as I said above, one will maintain two fundamentally different primary principles of motion, between which there stands a firm partition: movement by causes and movement by will. As to its interior, the first of these then remains eternally unintelligible because all its explanations leave behind the inscrutable *x*, which embraces all the more the higher the object under consideration stands – and the second, movement by will, stands as completely withdrawn from the principle of causality, as groundless, as freedom of individual actions, thus as completely in opposition to nature and absolutely inexplicable. In contrast, if we carry out the unification demanded above, of external and internal cognition at the point where they contact, then despite all accidental differences, we recognize two identities, one of causality with itself at all levels, and the other of what was formerly the unknown *x* (i.e. natural forces and phenomena of life[a]) with will in us. I say we recognize first the identical essence of causality in the different forms it must assume at the different levels, now showing itself as mechanical, chemical, physical causes, as stimulus, as intuitive motive, as abstract motive of thought: we recognize it as one and the same where the body that strikes another loses as much movement as it communicates, and where thoughts struggle with thoughts and the prevailing thought, as the strongest motive, sets the human being in motion, a motion that follows with no less necessity than that of the ball that is struck. Now when we ourselves are the ones moved and so we know the inner nature[b] of the process intimately and thoroughly, instead of being blinded and confused by this inner light and thus estranged from all the other causal connections lying before us everywhere in nature, and instead of always closing off the insight in us, if we connect this new internal cognition with the external cognition, its key, we will recognize the second identity – the identity of our will with that formerly unknown *x* that remains in all explanations of causes. As a result, we then say that even where the most [93] palpable cause produces an effect, the mysterious something, the *x*, the real interior of the process, the true agent, the 'in itself'[c] of appearance is still at hand – given to us after all only as representation, according to the forms and laws of representation – and it is essentially the same as that which is given to us in the actions of our body as intuition and representation, known to us intimately and immediately as *will*. This is (say what you will!) the foundation of true philosophy, and if this century will not see it, then many future centuries will. 'Time (if no other) is a man of honour.'[d] – Just as, on the one hand, we recognize the essence of causality, which is most distinct only at the lowest levels of the objectification of will (i.e. nature) again at all levels, even the highest, so, on the other hand, we also recognize the essence of will again on all levels, even the lowest, although we immediately receive this knowledge only from the highest of all levels. The old error says: where there is will, there is no longer causality, and where there is causality, there is no will. But we say: wherever there is causality, there is will, and will never acts without causality. Thus the point of controversy[e] is whether will and causality could and must exist simultaneously and together in one and same process. What makes it difficult to know that this is always so is the circumstance that causality and will are recognized in two fundamentally different ways (causality is always recognized from the outside, always mediately, always by the understanding; will is recognized completely from the inside, completely immediately), and that, therefore, in any given case, the clearer the cognition of the one, the more obscure is the cognition of the other. Therefore we recognize that where causality is the most comprehensible, the essence of will is the least comprehensible; and where will undeniably reveals itself, causality is so obscured that the uneducated could dare to deny it. – But now, as we have been taught by Kant, causality is nothing more than the *a priori* knowable form of the understanding itself, thus the essence of *representation* as such, which is one side of the world; the other side is *will*: it is the thing in itself. The extent to which causality and will become distinct stands in inverse relation, and this alternation [94] of the two depends on the fact that the more a thing is given to us merely as appearance, i.e., as representation, the more distinctly the *a priori* form of representation, i.e., causality, shows itself; so it is with inanimate nature – but conversely, the more immediately will is known to us, the more the form of representation, causality, recedes; so it is with us. Thus, the closer one side of the world approaches, the more we lose sight of the other.

***** Even *Copernicus* already said the same: '*Equidem existimo, Gravitatem non aliud esse, quam* appetentiam quandam *naturalem, partibus inditam a divina providentia opificis universorum, ut in unitatam integritatemque suam se conferant, in formam Globi coeuntes. Quam affectionem credibile est etiam Soli, Lunae caeterisque errantium fulgoribus, inesse, ut ejus efficacia, in ea qua se repraesentant rotunditate permaneant: quae nihilominus multis modis suos efficiunt circuitus.'* [I believe that gravity is nothing but a natural *longing*, instilled in all parts by the divine providence of the creator of all things so that they attain their unity and perfection by entering into their spherical form. Such striving appears also to dwell in the sun, moon and the rest of the glowing planets, by means of which striving they endure in the rotundity in which they represent themselves, despite the fact that they carry out their circuits in many ways.] (*Nicol. Copernici revol.* Book I, ch. ix. – Cf. *Exposition des Découvertes de M. le Chevalier Newton par M. Maclaurin, traduit de l'Anglois par M. Lavirotte*, Paris, 1749, p. 45.) [Below (pp. 392ff.) Schopenhauer cites the second edition of the original English work by MacLaurin]

Evidently *Herschel* has understood that if we do not, like *Descartes*, want to explain gravity by an impulse from without, we certainly must assume a will inherent in bodies. *Non datur tertium* [there is no third possibility]

a [Schopenhauer provides the following English in his text, preceded by his German translation]

a *Kraftanstrengung* [Schopenhauer uses this word to translate Herschel's 'effort' in the quote above (p. 389)]

a [See p. 72 above]

b [Schopenhauer refers here to Eva Lauk, then fourteen years old, born quadriplegic; see Hübscher *SW* 3, 44]

c *Apperçu*

d *Appercu*

a *Streben*

b *sich erscheinend manifestirt*

c *Willensäußerung*

d [cf. Plato, *Phaedrus* 245e]

e [Plato] *De legibus* [894bff.]

f *Somnium Scipionis*

g ἅπαν τὸ φερόμενον ἢ ὑφ’ ἑαυτοῦ κινεῖται, ἢ ὑπ’ ἄλλου (*quidquid fertur a se movetur, aut ab alio*) [243a11]

a [*Account of Sir Isaac Newton's philosophical Discoveries in four books* (2nd edn, 1850); at p. 390 above Schopenhauer cites Lavirotte's French translation]

b *profession de foi du vicaire Savoyard*

c *j'apperçois dans les corps deux sortes de mouvement, savoir: mouvement communiqué, et mouvement spontané ou volontaire: dans le premier la*

cause motrice est étrangère au corps mû; et dans le second elle est en lui-même

d [*Physiologie als Erfahrungswissenschaft* (1826–40)]

e *si omnes patres sic, at ego non sic*

a *Verständlichkeit der Naturerscheinungen*

b *Objektivation*

c *das Aposteriori*

a *Schwerkraft*

a *Phänomen*

a *reflektirend anschauen*

b *Nachsinnen*

c *aus dem eigenen Selbst des Beobachters*

d *Agens*

a [Goethe, *Faust*, I, 1323]

b *sich dem Selbstbewußtsein als Wille kund giebt*

c *urverschiedenen*

d *totale Diversität*

a *Lebenserscheinungen*

b *das Innere*

c *das Ansich*

d *Tempo è galant-uomo!* (*se nessun' altro*).

e *punctum controversiae*

[95] Linguistics

Under this heading I have merely to report an observation that I have made myself in recent years, one that appears to have escaped notice previously. However, *Seneca's* dictum provides evidence that my observation is worth considering: ‘the suitability of expression for many things is astonishing, and the use of language handed down from the ancients expresses many things effectively’,[a] *Epistle* 81. And *Lichtenberg* says: ‘if one thinks much oneself, then one will find much wisdom carried in language. Obviously, one does not introduce everything oneself, but much wisdom lies in language.’[b]

In very many, perhaps in all languages, the action of bodies without cognition, even inanimate ones, is expressed by willing; thus, a will is attributed to them from the outset; however, cognizing, representing, perceiving, thinking is never attributed to them: I know of no expression which might contain any of these.

Thus Seneca says (*Quaestiones Naturales* II, 24) of the fire of lightning hurled down from above: ‘It is for fire, as for trees, whose supple crowns can be pulled down so far that they even touch the ground; but when you let them loose, they spring back to their own place. It is therefore not fitting to have in mind for a thing a position not in accordance with its *will*. If fire is allowed to go where it *will*, it goes back to the sky.’[c] In a more general [96] sense, *Pliny* says: ‘in any part of nature, not reason, but will, is to be sought’, *Natural History*,[a] 37, 15. We have no fewer examples from Greek: *Aristotle*, in explaining gravity, says: (*On the Heavens* II, ch. 13) ‘a particle of earth, raised in the air and let loose, moves and *wills* not to remain.’[b] And in the following chapter: ‘But one must say of a thing, that it is as it *wills* according to its nature, but it is not what it is by force and contrary to its nature.’[c] It is very significant, and it is much more than mere linguistic significance, that where the topic is expressly about inanimate entities (fire, which strives upward and earth which strives downward) as well as about animals, Aristotle says in the *Great Ethics* I, ch. 14, that they ‘could not be compelled to do something against their nature or against their *will*'[d] – thus he quite correctly puts 'against nature'[e] as a paraphrase of 'against their will'.[f,123] – In the 29th ode[g] Anacreon, as he orders a portrait of his beloved, says of her hair: 'let the freely curling locks fall unarranged as they *want*.'[h] In German, Bürger says: 'the brook *wills* downwards, not upwards.'[i] And in everyday life we frequently say: 'when water boils, it wills to overflow', 'the vessel wills to burst', 'the ladder does not will to stand'. – 'the fire does not will to burn'[j]; 'the cord, once turned, always wills to rewind.'[k] – Even in English, the verb 'to will' has become the auxiliary of the future tense of all other verbs, whereby it is expressed that will lies at the basis of every action. But besides, the striving of inanimate things not having cognition is still expressly indicated by 'to want',[l] which is the expression for any human desiring and striving: 'the water wants to get out'; 'the steam wants to make itself way through'.[m] It is the same in Italian: *vuol piovere; – quest' orologio non vuol andare*.[n] Besides, the concept of willing is so deeply impressed on this language that it is applied in indicating anything required, anything necessary: [97] *vi vuol un contrapeso; – vi vuol pazienza*.[a]

We even find in the Chinese language, which differs fundamentally from all languages originating from the Sanskrit stem, a quite explicit example that is applicable here: for according to Father Regis' precise translation, in the commentary to the *I-Ching* it says 'The Yang, the celestial material, always *wills* to return to heaven, or (to use the words of Doctor Tching-tse) it *wills* again to be in a superior place, since its nature entails this or it is so by innate law' (*I-Ching*, ed. J. Mohl, Vol. I, p. 341).[b]

It is decidedly more than something linguistic, rather an expression of the course of events intimately understood and felt in a chemical process, when *Liebig* in his *Chemistry in Its Application to Agriculture*,[c] p. 394 says: 'aldehyde is formed, which, with the same *desire* as sulphurous acid, binds directly with oxygen to form acetic acid.' – And again in his *Chemistry in Application to Physiology*[d] 'aldehyde, which with *great desire* draws oxygen from the air'. Since he twice uses the same expression in speaking of the same phenomenon, it is not accidental, but because only this expression suits the subject.[*,124]

Thus [98] language, this immediate impression of our thoughts, provides evidence that we are compelled to think of each inner impulse as a willing, but in no way does language also attribute cognition to things. The agreement among languages on this point, perhaps without exception, attests that it is no mere figure of speech, but that a deeply rooted feeling about the essence of things here determines the expression.

a *Mira in quibusdam rebus verborum proprietas est, et consuetudo sermonis antiqui quaedam efficacissimis notis signat* [*Epistles* 81, 9]

b [*Miscellaneous Writings* (*Vermischte Schriften*), new edn, Göttingen: Dieterichsche Buchhandlung, 1844, Vol. 1, p. 326]

c *in his, ignibus accidit, quod arboribus: quarum cacumina, si tenera sunt, ita deorsum trahi possunt, ut etiam terram attingant; sed quum permiseris, in locum suum exsilient. Itaque non est quod eum spectes cujusque rei habitum, qui illi non* ex voluntate *est. Si ignem permittis ire quo* velit, *coelum repetet.* [Seneca *Quaestiones Naturales* II, 24 Sections. 2–3]

a *nec quaerenda in ulla parte naturae ratio, sed voluntas. Hist*[*oria*] *Nat*[*uralis*]

b (*de coelo* II, c. 13) μικρὸν μὲν μόριον τῆς γῆς, ἐὰν μετεωρισθὲν ἀφεθῇ, φέρεται, καὶ μένειν οὐκ *ἐθέλει* (parva quaedam terrae pars, si elevata dimittitur, fertur, neque vult manere) [294a 13]

c Δεῖ δὲ ἕκαστον λέγειν τοιοῦτον εἶναι, ὃ φύσει *βούλεται* εἶναι, καὶ ὃ ὑπάρχει, ἀλλὰ μὴ ὃ βίᾳ καὶ παρὰ φύσιν (unumquodque autem tale dicere oportet, quale naturâ suâ esse vult, et quod est; sed non id quod violentiâ et praeter naturam est) [297b 21]

d παρὰ φύσιν τι ἢ παρ’ ἃ *βούλονται* ποιεῖν [Schopenhauer provides the translation from *Ethica magna or Magna moralia* I, ch. 14, 1188b7; many consider the *Great Ethics* more likely to be a later Peripatetic's compilation]

e παρὰ φύσιν

f παρ᾽ ἃ βούλονται

g *in der 29sten Ode*, εἰς Βάθυλλον᾽ [perhaps ‘to the one with the luxurious hair’]

h Ἕλικας δ᾽ ἐλευθέρους μοι πλοκάμων, ἄτακτα συνθείς, ἄφες, ὡς *θέλωσι*, κεῖσθαι (*capillorum cirros incomposite jungens, sine utut volunt jacere*) [*Anacreontea* 16, 7]

i [Gottfried August Bürger (a.k.a. *Jocosus Hilarius*),‘To the Cold Casuists’ (*An die kalten Venünftlicher*) *Complete Works* (*Sämmtliche Schriften*) ed. Karl Reinhard, Göttingen, 1796, Vol. 2, p. 25; the poem also goes under the title ‘*An die Menschengesichter*’]

j *Le feu ne veut pas brûler*

k *la corde, une fois tordue, veut toujours se retordre*

l [Schopenhauer's English]

m [Schopenhauer's English]

n [‘it wills to rain; this clock wills not to work’]

***** The French chemists, too, say, e.g., ‘*Il est évident que les métaux ne sont pas tous également* avides *d'oxygène …la difficulté de la réduction devait correspondre nécessairement à une* avidité *fort grande du métal pur pour l'oxygène*’ [‘It is evident that metals are not all equally *desirous* for oxygen …the difficulty of reduction must necessarily correspond to pure metal's great *desire* for oxygen’] – (see Paul de Rémusat in *Revue des deux mondes*, [1 November] 1855, p. 649). Vaninus [Vanini] already (*de admirandis naturae* [*reginae deaeque mortalium*] *arcanis* [1516], p. 170) says: *argentum vivum etiam in aqua conglobatur, quemadmodum et in plumbi scobe etiam: at a scobe non refugit* [‘quicksilver assumes globular form even in water, as well as in lead filings’] (this is counter to Kardanus’ opinion, which is cited) *imo ex ea quantum potest colligit: quod nequit* (*scil. colligere*), *ut censeo*, invitum relinquit: natura enim et sua appetit, et vorat [‘but it does not stay free of the lead filings; rather, it takes up as much as it can, and what it is not able to take up, it relinquishes, I believe, *against its will, since nature desires and devours that which belongs to it*’]. This is apparently more than a matter of language: he quite decisively attributes a will to quicksilver. And so one will find everywhere that in physics and chemistry when one traces back to fundamental forces and to the primary properties of bodies that cannot be traced back any further, these are then indicated by wording appertaining to will and its expressions

a [‘it wills a counterweight’; ‘it wills patience’. The literal translation hardly works in English here; perhaps ‘patience is wanted’ and so on would be idiomatically nearer the mark]

b *Yang, seu materia coelestis*, vult *rursus ingredi, vel (ut verbis doctoris Tching-tse utar)* vult *rursus esse in superiore loco; scilicet illius naturae ratio ita fert, seu innata lex*

c *Chemie in ihrer Anwendung auf Agricultur* [*und Physiologie*, 5th rev. and enlarged edn, Braunschweig: Vieweg & Sons, 1843]

d *Chemie in Anwendung auf Physiologie* [*Die organische Chemie in ihrer Anwendung auf Physiologie und Pathologie*, Braunschweig: Vieweg & Sons, 1842]

[99] Animal magnetism and magic

When my principal work appeared in the year 1818, animal magnetism had just begun to fight its way into existence. But as regards the explanation of it, although some light had been cast on the passive side, that is, on what happens to the patient, where the contrast between the cerebral and ganglionic systems, which had been advanced by *Reil*, had been made the principle of explanation; still the active side, the actual agent by means of which the magnetist evokes this phenomenon remained in the dark. People groped among all kinds of material principles of explanation, types such as Mesmer's all-penetrating world ether, or the skin respiration of the magnetist which von Stieglitz assumed to be the cause, etc. At best, 'nerve-spirit' had been advanced, which, however, is only a word for an unknown thing. The truth had hardly begun to dawn on a few who had been profoundly initiated through practice. But I was still far from hoping to receive from magnetism a direct corroboration of my theory.

But 'time is a great teacher',[a] and so since that time the great schoolmaster, experience, has brought to light that the profoundly effective agent[b] – which, proceeding from the magnetist, produces effects that appear to be so completely contrary to the law-governed course of nature that the longstanding doubt about them, the obstinate [100] incredulity, the condemnation of a commission with Franklin and Lavoisier among the members, in short, everything that was opposed to magnetism in the first as well as in the second period (except the ignorant and stupid condemnation, carried out without inquiry, that prevailed in England until recently) is all completely excusable – but, I say, experience has brought to light that this agent is nothing else than the *will* of the magnetist. I do not believe that nowadays any doubt at all prevails about this among those who combine practice with insight, and I take it to be superfluous to cite the numerous magnetists' statements that confirm it.[*,125] Thus *Puységur's* and the older French magnetists' rallying cry, *veuillez et croyez!*, i.e., 'will with confidence', has not only been proved by time, but has developed into a correct insight into the process itself.[**,126] From *Kieser's Tellurism*,[a] still probably the most fundamental and thorough manual on animal magnetism, it is sufficiently clear that no magnetic act is effective without will; in contrast, mere will, without external action, can produce every magnetic effect. Manipulation appears only to be a means to fix the act of will and its direction and at the same time to embody it. In this sense, Kieser says (*Tellurism*, Vol. 1, p. 379): 'Insofar as the hands of the human being, as those organs that most visibly express the effective activity of the human being [i.e. will] are the organs at work in magnetism, magnetic manipulation arises.' *De Lausanne*, a French [101] magnetist, expresses himself more precisely about this in the *Annals of Animal Magnetism*,[b] 1814–16, P. 4, as he says: 'To be sure, the activity of the magnetist depends only on will, but since the human being possesses *an external and sensible form*, then everything that is for the human's use and everything that will affect the human must necessarily possess such a form, and so that will can act, it must employ a method of action.'[c,127] Since according to my theory the organism is the mere appearance, visibility, objecthood[d] of will, indeed, actually only will itself intuited in the brain as representation, then the external act of manipulation also coincides with the inner act of will. But where it works without this,[128] it happens to a certain extent artificially, in a round-about way, in that the imagination replaces the external act, and sometimes even the person's presence; so it is much more difficult and rarely achieved. Thus Kieser continues that the loud cry 'Sleep!' or 'You should!' works more effectively on the somnambulist than the mere inner willing of the magnetist. – In contrast, manipulation and the external act in general is actually an infallible means for fixing and activating the magnetist's will, just because external acts are absolutely impossible without any will because the body and its organs are nothing but the visibility of will itself. This explains the fact that the magnetists sometimes magnetize without being conscious of the effort of their will and almost without thinking, but still are effective. Generally it is not consciousness of willing, reflection upon it, but the pure willing itself, separated from all possible representation, which makes magnetism effective. Therefore we find in the instructions for the magnetist that Kieser provides (*Tellurism*, Vol. 1, pp. 400ff.) that all of the doctor's as well as the patient's thinking and reflection about everything they mutually do and suffer, all external impressions that excite representations, all conversation between the two, all presence of strangers, even daylight, etc. are expressly prohibited, and it is recommended that everything as far as possible proceed unconsciously,[a] as applies also to sympathetic cures. The true basis of all of this is that here will is effective in its primacy, as thing in itself, which requires that representation, as a realm different from it, a secondary one, [102] be closed out as far as possible. In all recent and better works on magnetism one can find actual evidence of the truth that what really works in magnetism is will, and that every external act is only its vehicle, and it would be an unnecessary prolixity to repeat them here; however, I will present *one* here, not because it is especially striking, but because it originates in an extraordinary man and is of special interest as his testimony: it is Jean-Paul, who, in a letter (printed in *Truth from Jean-Paul's Life*,[b] Vol. 8, p. 120) says: ‘In a large group, I have almost put a Mrs von K. to sleep twice merely by looking at her with a *resolute will* of which no one knew; before that I brought on heart palpitations and pallor until S. had to assist her.’ Today merely taking and holding the patient's hand while looking at the patient fixedly is often substituted for the usual manipulation with great success just because this is also suitable to fix will in a determinate direction. This immediate power that will can exercise over others is revealed more than anything by the wondrous experiments of Mr *Dupotet* and his students, which took place in Paris, even in public, and in which merely through his will, supported by a few gestures, he directs and determines a stranger as he pleases, indeed, compels her to the most amazing contortions. A brief report on this informs a little work appearing to be quite honestly written: *A First Glance into the Wonderful World of Magnetism*,[a] by Karl Scholl, 1853.[*],[129]

[103] Another sort of example of the truth in question is provided in *Communications from the Somnambulist Auguste K. in Dresden*[b] 1843, by what she herself says, p. 53: ‘I found myself in a half sleep; my brother wanted to play a piece familiar to him. Because the piece did not please me, I asked him not to play it. He nevertheless attempted to do so, and I managed with my resolutely opposing will to make it so that despite all his efforts, he could no longer remember the piece.’ – But the business[a] reaches its highest climax when the immediate power of will is extended even to inanimate bodies. As incredible as this appears, there are nonetheless two reports about this issuing from completely different sources. [104] Specifically, the book just mentioned, pp. 115–16 and 318, reports with the

testimony of witnesses that one time this somnambulist turned the needle of a compass 7° and another time 4°, and indeed, she repeated this experiment four times solely through her will by fixing her sight on the needle without using her hands at all. – Then it is reported by the English journal *Brittania, Galignani's Messenger*, of 23 October 1851, that the somnambulist Prudence Bernard from Paris, in a public session in London, merely by turning her head back and forth compelled the needle of a compass to follow this movement, to which Mr *Brewster*, the son of the physicist, and two other men from the audience ‘acted as jurors.’[b,130]

Now when, in animal magnetism and in other things, we see will – which I have presented as the thing in itself, as the only real thing in all existence, as the core of nature – achieving through the human individual things not to be explained by causal connection, i.e., by the law of the course of nature, indeed, things that to a certain extent suspend this law and actually exert action at a distance,[c] revealing a supernatural, i.e., metaphysical mastery of nature – then I know of no more factual corroboration of my theory that could still be required. There is even a magnetist, who without a doubt is unfamiliar with my philosophy, Count Szápáry, who, as a result of his own experiences, added to the title of his book, *A Word about Animal Magnetism, Soul Bodies, and Vital Essence*, 1840, these remarkable words by way of elucidation: *Or Physical Proof that the Animal--Magnetic Current is the Element and* Will is the Principle of all Spiritual and Corporeal Life.[d,131] – So animal magnetism appears positively as *practical metaphysics*, as that which Bacon of Verulam already designated as *magic* in his classification of the sciences (*The Great Instauration*,[e] Book III): it is empirical or experimental metaphysics. – Moreover because will appears as thing in itself in animal magnetism, we see the [105] *principium individuationis*[f] (space and time), which belongs only to appearance, immediately defeated;[g] its boundaries, separating individuals, are breached; spaces between the magnetist and the somnambulist are no separation; community of thought and movement of will occur; the state of clairvoyance sets aside relations belonging to mere appearance conditioned by space and time: proximity and distance, present and future.

As a result of such factual evidence, despite so many opposing reasons and prejudices, the opinion gradually gained credence, indeed almost reached certainty, that animal magnetism and its phenomena are identical with part of the *magic* of former times, of that notorious, occult art that all ages were thoroughly convinced is real – not just the Christian centuries, which so vigorously persecuted it, but all peoples of the whole earth, not excluding the savage peoples; and for the pernicious application of such magic, the twelve tables of the Romans,[*,132] the books of Moses, and even the eleventh book of Plato's *Laws* impose the death penalty. How seriously it was taken, even in the most enlightened Roman times under the Antonines, is shown by the fine speech Apuleius made in court in his defence against the charge raised against him, threatening his life (*Oration on Magic*,[a] p. 1904 Bip. edn), where he is simply concerned to deflect the charge, but nowhere to deny the possibility of magic; rather, he goes into such trifling details as usually figured in the witch trials of the middle ages.[133] In Europe only the previous century constitutes an exception to this belief in magic, and in fact this exception is the result of Baltazar Becker,[b] Thomasius, and some others who, with the good intention of closing the door forever on the cruel witch trials, maintained that magic is impossible. This opinion, favoured by philosophers of that same century, gained the upper hand at that time; however, only among those of learned and educated station. The people have never ceased to believe in magic, not even in [106] England, where the educated classes, in contrast, know how to combine a degrading blind faith in religious matters with an unshakeable doubting Thomas or doubting Thomasius attitude towards all facts that transcend the laws of action and reaction or acid and alkali, and do not want to let it be said by their great countryman that ‘there are more things in heaven and earth than are dreamt of in your philosophy’.[c,134] – A branch of ancient magic has even been maintained among the people through daily practice, even in public, which is permitted because of its beneficial purpose, namely sympathetic cures, whose reality is scarcely to be doubted. The most common is the sympathetic cure for warts, the effectiveness of which the cautious and empirically-minded Bacon[135] of Verulam already confirmed from personal experience (*Silva Silvarum,* § 997); then, too, charming away erysipelas is so frequently done with success that it is easy to convince oneself of it; likewise, charming a fever often succeeds, etc.[*,136] – Given what has been said above of magnetism, there is no need for explanation that in this the actual agent is not the senseless words and ceremonies, but, as with magnetism, the will of the healer. Those unfamiliar with such cases may find examples of sympathetic cures in Kieser's *Archives for Animal Magnetism*,[a] Vol. 5, No. 3, p. 106; Vol. 8, No. 3, p. 145; Vol. 9, [107] No. 2, p. 172; and Vol. 9, No. 1, p. 128. Also the book by Dr *Most*, *On Sympathetic Means and Cures*, 1842, is useful for a preliminary familiarity with the subject.[**],[137] – Thus these two facts, animal magnetism and sympathetic cures, empirically confirm the possibility of a magical, as opposed to a physical effect, a possibility which the previous century had so peremptorily discarded because it did not want to give credence to any other effect than the physical, brought about in accord with the comprehensible causal nexus.

It is a fortunate circumstance that the correction of this view that has arrived in our day stems from medical science, because this science ensures at the same time that the pendulum does not again receive too strong an impulse towards the opposing side, and that we could not be cast back into the superstition of ignorant times. Also, as I said, it is only a part of magic whose reality is vindicated by animal magnetism and sympathetic cures: magic is still comprised of much more, a large part of which for the present remains subject to the ancient condemnation, while another part, through its analogy with animal magnetism, must be thought of at least as possible. For animal magnetism and sympathetic cures provide only beneficial effects intended to heal, similar to those which in the history of magic appear in Spain as the work of the so-called *Saludadores*[a] (Delrio, *Disquisitions on Magic*,[b] Book III, p. 2, q. 4, p. 7 – and Bodinus, *On Demonic Magic*[c] III, 2), but which nonetheless were condemned by the church; in contrast, magic was much more often turned to with pernicious intent. However, by analogy it is likely that the inherent power that can exercise a healing influence when it works immediately on the other individual will be at least as powerful in affecting them injuriously and destructively. If therefore any part of ancient magic, besides that which can be traced back to animal magnetism and sympathetic cures, was [108] real, then it is certainly what is designated as *maleficium* and *fascinatio* and directly gave rise to most of the witch trials.[d] In *Most's* book, cited above, can be found a few facts that are definitely to be attributed to *maleficium* (specifically pp. 40–1 and nos. 89, 91, and 97); also in Kieser's *Archive,* in the thorough account of the illness of Bende Bensen that proceeds through vols. 9 to 12, there can be found cases of transmitted diseases,[e] especially of dogs that have died of them. We see from Plutarch's *Symposium Questions*,[f] v, 7, 6, that *fascinatio* had already been recognized by Democritus, which he attempted to explain as factual. If these explanations are taken as true, then we have the key to the crime of witchcraft, the zealous persecution of which would thus not be without reason. Although in most cases this persecution was based on error and abuse, then we still should not hold our forebears to be so completely deluded that they prosecuted a crime that was absolutely impossible with such cruel severity over so many centuries. From this point of view we can also understand why until today the people in all countries obstinately ascribe certain cases of illness to *maleficium* and cannot be convinced otherwise.[138] – Now if by the process of time we are moved to view a part of this notorious art as not so empty as the past century assumed, nonetheless nowhere is it more necessary than here that we be cautious to fish isolated truths out of the confusion of lies, deceit, and nonsense, which we find preserved in the writings of Agrippa von Nettesheim, Wierus, Bodinus, Delrio, Bindsfeldt, *et al.* For lies and deception, common everywhere in the world, nowhere have such free play than where the laws of nature are admittedly forsaken, and indeed are declared to be suspended. And so, built on the slim basis of the little truth there may have been in magic, we see a tower of the most incredible fables, the wildest fictions reaching to the heavens, and as a result of these the most bloody cruelties practised for centuries; when we consider these, we are overcome by the psychological reflection on the susceptibility [109] of the human intellect to the most incredible, indeed boundless, nonsense, and the readiness of the human heart to set the seal on it through cruelties.

What has modified the judgement on magic today in Germany among the educated is, however, not solely animal magnetism; rather, the way for this change was prepared at a more profound level by the transformation of philosophy brought about by Kant, which in this, as in other areas, set up a fundamental difference between German and other European education. – In order to ridicule all occult sympathy or even magical effect out of hand, one must find the world highly, indeed absolutely, intelligible. But this can be done only if the world is looked into with an extremely superficial gaze that allows no notion[a] of the fact that we are awash in a sea of riddles and mysteries and that we neither know nor understand either things nor ourselves immediately through. The opposite way of thinking to this is just what makes it the case that almost all great men, regardless of age and nation, have shown a certain tinge of superstition. If our natural way of cognizing were such that it immediately revealed to us things in themselves and, consequently, the absolutely true relations and connections of things, then certainly we would be justified in rejecting *a priori*, and thus unconditionally, all foreknowledge of the future, all appearance of those who are absent, dying, or even dead, and all magical effects. But if, as Kant taught, what we cognize is merely appearances, the forms and laws of which do not extend to things in themselves, then such a rejection is patently premature since it rests on laws whose apriority restricts them just to appearances and leaves things in themselves, to which our own inner self too must also belong, untouched by these forms and laws. But just these things in themselves could have a relation to us from which the above-named events could arise, and the decision about this relation would then be something to be awaited *a posteriori*, and not to be anticipated. That the English and French obstinately persist in the rejection *a priori* of such events fundamentally consists in the fact that they are essentially [110] in thrall to Lockean philosophy, according to which we know things in themselves merely by removing sensation;[b] hence, the laws of the material world would then apply unconditionally and no other influence than a physical influence[a] could be admitted. Thus the English and French believe only in a physics, but not in any metaphysics, and so they accordingly accept no other magic than the so-called ‘natural magic’, an expression that contains the same contradiction in terms[b] as ‘supernatural physics’, but the former expression is used countless times in earnest; whereas the latter is used only *once* as a joke, by Lichtenberg. In contrast, with their constant readiness to believe in supernatural influences in general, the people in their own way express their conviction, albeit only felt, that the things we perceive and apprehend are merely appearances, not things in themselves. A passage from Kant's *Groundwork of the Metaphysics of Morals* may verify that this is not saying too much: ‘To make this remark requires no subtle reflection, but it may be assumed that the most common understanding can make it, though in its own way, by an obscure discrimination of judgement that it calls feeling: that all representations that come to us involuntarily (such as those of the senses) enable us to cognize objects in no other way than as they affect us, whereby what they may be in themselves remains unknown to us; so that, concerning this type of representation, even with the most strenuous attentiveness and distinctness that our understanding can ever bring to them, we can achieve only cognition of *appearances*, never of *things in themselves*. As soon as this distinction is once made…then it immediately follows that we must admit and assume behind appearances something else that is not appearance, namely things in themselves' (3rd edition, p. 105).[c]

When one reads D. Tiedemann's history of magic, under the title *Disputation on the Question of What is the Origin of the Art of Magic*,[d] Marburg, 1787, a prize essay crowned by the Göttingen Society, one will be amazed at the tenacity with which humankind has clung to the idea of magic everywhere and at all times despite so many failures, and one will [111] conclude from this that it has a deep basis at least in the nature of the human being, if not in things generally, but it could not be an arbitrarily created whim.[139] Although the definition of *magic* differs among authors, still the fundamental idea can never be mistaken. The dominant opinion at all times and in all countries has been that in addition to the regular way alterations are produced in the world by means of the causal nexus of bodies, there must be still another completely different way, one not at all based on the causal nexus; thus its means would obviously appear absurd if construed in the same way as the other kind, in that the applied cause would so obviously be ill suited to the intended effect and the causal nexus between the two would be impossible. But the presupposition made about this was that beyond the external connection between the appearances of this world, the external connection which is the basis for the physical nexus,[a] there must be still another, proceeding through the essence in itself of all things, a subterranean connection, so to speak, whereby *one* point of appearance would be able immediately to affect any other by a metaphysical nexus;[b] that therefore it must be possible to affect things from within, instead of from without as is usual, an effect of appearance on appearance by means of the essence in itself that is one and the same in all appearances; that, just as we act causally as created nature,[c] we would also be capable of acting as creating nature,[d] and for the moment the microcosm would assert itself as macrocosm; that the partitions of individuation and separation, no matter how firm, could still occasionally permit a communication, as it were, behind the curtains, or like a secret game under the table; and just as there is a suspension of the isolation of the individual's *cognition* in somnambulistic clairvoyance, there could also be a suspension of the isolation of the individual's *will*.[140] Such an idea cannot originate empirically, nor can it be corroborated through experience that has maintained it throughout all time in all countries, since in most cases experience must be directly [112] opposed to it. I am thus of the opinion that the origin of this ineradicable idea, so universal among humankind, despite common sense and so much experience to the contrary, must be sought quite deeply, specifically in the inner feeling of the omnipotence of will itself, that will which is the inner essence of the human being and at the same time all of nature, and in the connected presupposition that just once, in some way or another, this omnipotence could be asserted by the individual. What might be possible for will as thing in itself could not be investigated and separated from what might be possible for will in its particular appearances; rather it was assumed beforehand that under certain circumstances, will was capable of breaking through the barriers of individuation, for that inner feeling tenaciously opposed the knowledge pressed upon it by experience, that

The God who in my breast abides
Profoundly stirs my inner being,
Who over all my powers presides
Cannot move an outer thing.[a]

According to the fundamental idea presented here, we find that in all attempts at magic the physical means applied are always taken as a vehicle for something metaphysical – in that otherwise it could obviously have no relation to the intended effect; the same is true of foreign words, symbolic actions, drawn figures, wax images, etc. And according to this primitive[b] feeling we see that what was borne by such a vehicle was ultimately always an act of *will* connected to it. The very natural occasion for this was the fact that in the motions of our own bodies we became aware at every moment of a completely inexplicable, that is, obviously metaphysical, influence of will; could this, it was thought, not be extended to other bodies? To find the way to this, to suspend the isolation in which will finds itself in every individual, to achieve an increase of the immediate sphere of will beyond the body of the one willing – that was the task of magic.

However this fundamental idea, from which magic really [113] appears to have arisen, was far from passing into clear consciousness and being recognized abstractly,[c] and magic was far from understanding itself. As I will soon make evident through citations, it is only among some thoughtful and learned authors of earlier centuries that we find the clear idea that the magical effect lies in *will* itself, and that the fantastic signs and acts, along with the senseless words that accompany them, that served as means for exorcising and binding demons, are merely vehicles and means to fix *will*, so that the act of will that is to work the magic ceases to be a mere wish and becomes a deed, receiving a *corpus* (as Paracelsus says); and to an extent these writers offer the positive explanation that the individual will now asserts itself[d] as universal will, as will in itself. For in any magic act, sympathetic cure, or whatever it be, the external action (the means of binding) is just what passing[e] is in magnetic thus, external action is actually not what is essential, but is the vehicle whereby will, which alone is the real agent, gets its orientation, is fixed in the physical world and steps into reality; therefore it is, as a rule, indispensable.[141] – Among the rest of the writers of that time, their settled purpose is to exercise at will[f] an absolute mastery over nature, as is consistent with that fundamental idea of magic. But they cannot rise to the idea that it must be an immediate mastery; rather, they thought of it only as *mediated*. For religions of all countries placed nature under the mastery of gods and demons. Now to direct these in conformity to his will, to move them into his service, indeed to compel them, was the endeavour of the magician,[a] and he ascribed to them anything that he might achieve, just as at the beginning Mesmer ascribed the success of his magnetising to the bar magnets that he held in his hands, instead of to his will, which was the true agent. All polytheistic peoples took the matter to be this way, and even Plotinus[*] [114] and especially Iamblichus understood magic in this way, that is, as *theurgy* – an expression Porphyrius was the first to use. Polytheism, that divine aristocracy, was favourable to this interpretation because it had divided the mastery over different forces of nature among a like number of gods and demons, who at least for the most part were just personifications of natural forces, and the magician won over or subjected to his service first this one and then that one. But in the divine monarchy, in which all of nature is submissive to a single god, it would have been too bold an idea to conclude a private alliance with this god or to want to exercise a mastery over him. Therefore, where Judaism, Christianity, or Islam prevailed, the omnipotence of the one God stood in the way of that interpretation, and the magician did not dare to challenge that omnipotence. So there remained nothing left for him but to take refuge with a devil, and he now concluded an alliance with this rebel (or most likely the immediate descendant of Ahriman) to whom still belonged some power over nature, and thereby assured himself of assistance: this was ‘black magic’. Its opposite, white magic, was that through which the sorcerer[b] did not befriend the devil, but sought permission, or even the cooperation of the one God himself to petition the angels; yet more frequently the sorcerer mentioned rarer Hebrew names and titles of God, such as Adonai and the like, to invoke devils and compel them to obey without his having to promise the devil anything: coercion of hell.[**] – All these mere interpretations and dressings-up of the matter were taken to be the essence of it, and to be objective events, to the extent that all the writers who knew magic not from their own practice but only second hand, such as Bodinus, Delrio, Bindsfeldt, etc. define the essence of magic as an effect, not through natural force nor in a natural way, but through the assistance of the devil. This was and still remains the prevailing universal belief, modified locally according to the religion of the country; the belief was also [115] the basis of laws against sorcery and of witch trials; challenges to the possibility of magic were as a rule also directed against this belief. But such an *objective* conception and interpretation of the subject must necessarily occur because of the decided realism which prevailed throughout Europe both in antiquity and in the middle ages, and was first shaken by Descartes. Until then the human being had still not learned to direct speculation toward the secret depths of his own inner being; rather, he sought everything externally. And even to make the will that he found in himself into the master of nature was such a bold idea that he would have been terrified; thus, it was made into imaginary beings to whom the prevailing superstition had granted power over nature so as at least to make it indirectly into the master of nature. Moreover, all kinds of demons and gods are always hypostases by means of which the faithful of any stripe and sect make understandable to themselves the *metaphysical*, that which lies *behind* nature, that which imparts to nature its being and permanence, and therefore has mastery over it. Thus if it is said that magic works through the assistance of demons, then the sense lying at the basis of this idea is still that it is an effect not by a physical route, but by a *metaphysical* one, not a natural, but a supernatural effect. But now if we recognize in the few facts that speak for the reality of magic (specifically animal magnetism and sympathetic cures) nothing but an immediate effect of will that here expresses power outside the willing individual, which otherwise would be expressed inside, and if we see that (as I will soon show and illustrate through definite and unambiguous citations) those more deeply initiated in ancient magic derived all magical effects from the *will* of the magician – then this is certainly a strong, empirical confirmation of my theory that the metaphysical as such,[a] the only thing existing beyond representation, the thing in itself of the world, is none other than that which we know in ourselves as *will*.

Now if these magicians thought the immediate mastery that [116] will may occasionally exercise over nature is merely a mediated mastery with the help of demons, then this would be no hindrance to their work wherever and whenever such work may generally have taken place. For precisely because will in itself is active in things of this type in its originality,[a] and thus separated from representation, false concepts of intellect cannot then thwart its work; on the contrary, theory and practice here lie very far apart: the falsity of theory does not stand in the way of practice, and the correct theory does not enable practice. Mesmer at first ascribed his effectiveness[b] to bar magnets that he held in his hands and afterwards explained this wonder of animal magnetism by a materialistic theory of a fine fluid permeating everything, but he was nonetheless effective with amazing power. I knew a squire whose peasants had been accustomed for ages to having their attacks of fever driven away by the gentleman's conjuring:[c] although he was now fully convinced of the impossibility of all things of this sort, he did what the peasants wanted in the traditional way out of goodwill and frequently with favourable result, which he then attributed to the peasants' firm confidence,[142] without considering that such confidence must frequently make quite useless medicine effective for many trusting patients.

Now as is consistent with what has been described above, if theurgy and magic mediated by demons[d] was simple interpretation and dressing-up of the matter, a mere outer shell at which most writers stop, there was yet no lack of people who, on glancing inward, recognized quite well that what works in occasional magical influences was absolutely nothing other than *will*. But we are not to seek these profoundly insightful people among those who approach magic as strangers, even with hostility, and most books on magic are by such people: these are people who know magic merely from court rooms and the interrogation of witnesses, and who thus describe merely the outside of magic; indeed, in order not to spread the terrible vice of sorcery, they are cautiously silent about the actual procedures of magic, when such procedures perhaps became familiar to them through confessions: Bodinus, Delrio, Bindsfeldt, and many others are of this type. In contrast, for information concerning the actual essence of the matter, we must seek among the philosophers and natural scientists [117] from those times of prevailing superstition. But from their statements it becomes most clear that with magic, precisely as with animal magnetism, the actual agent is nothing other than *will*. To document this, I must bring up some citations. *Roger Bacon*, in the thirteenth century said 'when an evil-minded human being with all of his power thinks of injuring another, ardently longing to do so, and intending to do so with determination, and is also firmly convinced that he can injure another, there is no doubt that nature will obey the intentions of his will'[a] (*Opus Majus*,[b] London, 1733, p. 252). But in particular it is *Theophrastus Paracelsus* who provides more information about the inner essence of magic than perhaps any other, and even does not shy away from giving an exact description of its processes, particularly (according to the Strasbourg edition of his works in two folios, 1603) in Vol. 1, pp. 91, 353ff. and 789; Vol. 2, pp. 362, 496. He says in Vol. 1, p. 19: 'Observe the following about wax images: if in my will I bear hostility toward another, then this hostility must be expressed through a *medium*, i.e., a *corpus*. Thus it is possible for my mind to stab or wound another using my sword without my body's help, through *fervent desire*. Thus it is also possible for me, through my *will*, to put the spirit of my opponent into the image and then deform or paralyse him as I please…You should know that the effect of *will* is an important point in medicine. For one who begrudges another all good, and even hates him, it is possible that if he curses him, this curse will take effect. For cursing comes from a pronouncement of the spirit. Thus it is possible that images can be cursed into illnesses, etc.… Such an effect occurs also in cattle, and actually much more readily than in humans since the human spirit offers more resistance than that of cattle.'

P. 375: ‘From this it follows that one image casts a spell on another, not from the force of character, or the like, through [118] the virgin bees’ wax; rather, the imagination overcomes its own constellation so that it becomes a means to fulfilling its heaven's will, i.e., that of its human.’

P. 334: ‘All human imagining comes from the heart: the heart is the sun in microcosm. And all human imagining proceeds from the little sun of the microcosm to the sun of the large world, into the heart of the macrocosm. Thus imagination of the microcosm is a seed which becomes material’, etc.

P. 364: ‘It is sufficient for you to know what the strict imagination does, which is a beginning of all magical works.’

P. 789: ‘Thus my thought, too, is my looking at an end. Now I must not turn my eye in that direction with my hands, but my imagination turns it wherever I desire. Thus, as is to be understood of walking: I desire, I propose to myself, and so my body moves, and the firmer my thought is, the more certain it is that I go. Thus imagination alone is a mover of my going.’

P. 837: ‘Imagination that is used against me may be used so rigorously that I might be killed by the imagination of another.’

Vol. 2, p. 274: ‘Imagination is from longing and desire: longing produces envy and hatred, since they do not occur unless you have the longing for them. As soon as you have longing, the work of the imagination follows. This longing must be as quick, eager, lively, as that of a woman who is pregnant, etc.…A common curse commonly comes true: why? it comes from the heart, and the seed lies and is born in this coming-from-the-heart. Thus, too, curses of father and mother come from the heart. The curse of the poor is also imagination, etc. The prisoner's curse, also only imagination, proceeds from the heart…So, too, if someone wants to stab someone, paralyse someone, etc. through his imagination, he must first attract to himself the thing and the instrument; then he may impress it: for what comes in, may also go out again through the thoughts as if it were done with the hands…Women excel over men in such imagining…since they are more heated in revenge.’

P. [119] 298: ‘Magic is a great occult wisdom, just as reason is great public folly…No armour protects against sorcery, since it injures the inner person, the spirit of life…Some sorcerers make an image in the form of a human being whom they have in mind and drive a nail in the sole of its foot: the person is invisibly struck and paralysed until the nail is pulled out.'

P. 307: 'We should know that solely by faith and our forceful imagination, we may bring any human spirit into an image…No exorcism is required, and the ceremonies, making of circles, fumigations, seals, etc., are just monkey business[a] and seduction…*Homunculi* and images are made, etc.…in which all operations, powers, and will of humans are carried out… The human mind is so great that it is not possible for anyone to express it; just as God himself is eternal and imperishable, so too is the human mind. If we humans really knew our minds, then nothing on earth would be impossible for us…The perfect imagination which comes from the stars,[b] arises in the mind.'

P. 513: 'Imagination is confirmed and perfected by the belief that it really occurs, since every doubt shatters its work. Faith should confirm the imagination for faith determines will…But that the human does not always imagine perfectly, *believe* perfectly, has the result that the arts must be called uncertain, however certainly and well they may exist.' – A passage from Campanella, in his book *On Sensory Things and Magic*[a] will serve as explanation of the last passage: 'another person's influence can have the effect that a man cannot carry out the act of procreation if he just does not believe he can do so, for he cannot do what he does not believe he can do' (Book IV, ch. 18).[143]

In the same sense, Agrippa von Nettesheim says in *On occult philosophy*,[b] Book I, ch. 66: 'the body is no less subject to the influence of another's mind than to the influence of another's body';[c] and ch. 67: 'Everything that the soul of a very hate-filled person dictates has the effect of harming and destroying, and it is similar with everything else that the soul desires with a very great longing. For everything that such a person then does and dictates by means of written symbols, figures, [120] words, gestures, and the like, all this supports the soul's longing and achieves certain miraculous powers, whether through the one who acts at the time when a powerful longing of this kind especially fills the soul, or through a celestial influence that then raises the soul to such excitement'[d] – ch. 68: 'In a person's soul there dwells a certain power to determine things and people and to bind them to that which it desires, and all things obey it when it is deeply stirred by some sort of passionate energy to such a degree that it overpowers those whom it binds. The cause of a binding of this sort is the violent and immoderate excitement of the soul itself.'[e]

Likewise *Julius Caesar Vanini*, *On the wondrous secrets of nature*,[f] Book IV, dialogue 5, p. 434: 'A vehement imagination, which obeys spirit and blood, can really affect a thing conceived in the mind, not only inwardly, but also outwardly.'[*,a,144]

Just so says *Johann Baptiste van Helmont*, who takes pains as much as possible to argue away the devil's influence in order to attribute it to will. From the large collection of his works, *The Origin of Medicine*,[b] I quote several passages, citing individual writings:

Recepta injecta, § 12. 'As the enemy of nature (the devil) is unable to effect the application itself on his own, he awakens in the sorceress the [121] notion of a strong desire and hatred, so that by borrowing those mental and arbitrary media, he may transfer his will, through which he intends to influence everything.'[**,145] 'And for this purpose he prescribes for these his extremely repulsive beasts, even execrations, with the idea of desire and terror.' – § 13. 'For just as that longing is a passion in the imagination, so it also creates a notion not merely void, but acts and occasions enchantment.' § 19. 'as I have already shown, the main power of enchantment depends on the sorceress's natural idea.'[a]

De injectis materialibus, § 15. 'By means of her natural being, the sorceress forms in her imagination a voluntary, natural, and harmful idea… Sorceresses work by means of their natural power…Human beings send out from themselves a strange, emissive, impervious medium that has the effect of enchanting a person, which medium is the idea of a strong desire. It is inseparable from a desire to move to that which is desired.'[b]

De sympatheticis mediis, § 2. 'The ideas of desire are cast into their object, however remotely it may be located, on the path of celestial influences. They are directed by the desire that specifies an object'.[c]

De magnetica vulnerum curatione, § 76. 'Therefore there is to be found in the blood a certain ecstatic power; when this has once been excited by a burning desire it is carried across even to an absent object through the spirit of the outer person: this power is latent and exists potentially; it does not become active unless it is excited through the kindling of the imagination by a burning desire or similar means.’ – § 98. ‘The soul, which is absolutely and entirely spirit, would never be able to move or excite the breath of life (which is thus corporeal), and still less flesh and bones, unless a certain power naturally inherent in it, yet magical and spiritual, descended from the soul into the spirit and body. Tell me, in what way could the bodily spirit obey the command of the soul, unless such a command existed to move the spirit, and thereafter the body? But you will at once object to this magical [122] power of movement, that it must remain within what is peculiar to it and within its natural domain; therefore, you will say that although we call it magical, this is only a misrepresentation and misuse of the name; for a true superstitious magic cannot derive its basis from the soul, since this very soul would not in any way be able to change or excite something outside its body. I respond that the power which in magic is natural to the soul, operating outwardly, lies already hidden and obscured in humans by virtue of God's image; they slumber (after the fall) and require stimulation: but although they are always present within us in a drowsy and intoxicated form, they are always sufficient to carry out the functions in our own body; consequently, magical knowledge and power are asleep, and only in stimulation do they become effective in humans.’ – § 102. ‘Therefore it is Satan who excites this magic power (which usually slumbers and is impeded by the person's outer consciousness) in those who have sold themselves to him; and it is at their command as is a sword in a powerful hand, that is, that of the sorceress. And actually Satan contributes nothing further to murder except to stimulate the slumbering force.’ – § 106. ‘The sorceress can kill a horse in a distant stable; a certain natural, effective force comes from the spirit of the sorceress and not from Satan, and this force is capable of repressing and choking off the horse's life breath.’ – § 139. ‘I describe as the patron spirit of magnetism, not those who descend from heaven, and even less do I speak of those from the infernal; rather, I speak of those arising in humans themselves, just as a fire originates in a flintstone: thus a little of the influential vital spirit is drawn from the human will, and it is just that which assumes an ideal entity, or essentially a form, so to speak, in order to complete itself. After the spirit has attained this completion, the spirit assumes a middle state between the corporeal and incorporeal. But it can be sent where the will directs it, and so that ideal entity is not…stopped by any barrier of place, time, or distance; it is not a demon, or the effect of such, but a spiritual effect of the thing in question which is for us quite natural and familiar.' – § 168. 'To this point, I have refrained from proclaiming the immense mystery, thus from showing clearly that there resides in a human being an energy in virtue of which one is able by mere will and imagination to act outside himself and to express force, so also an influence, which persists and can reach an object, however remote.'[a]

P. Pomponatius ('On incantations' *Works*, 1567, p. 44) also says: 'And so it happens that there are humans who have [123] in their power such forces, and when these forces become evident through imagination and appetitive power, such virtue comes into action and influences blood and spirit; by exhalation such forces press outward and produce effects like this.'[a]

Jane Leade, a student of *Pordage*, a mystical Theosophist and visionary from Cromwell's time in England, has given quite remarkable explanations of this sort. She arrives at magic through a quite singular path. As it is the fundamental characteristic of all mystics that they teach the unification of their own self with the God of their religion, so too does *Jane Leade*. But now according to her, as a consequence of the unification of the human will with the divine, the former also shares the omnipotence of the latter, thus acquiring magical power. So what other magicians believe they owe to a pact with the devil, she ascribes to her unification with her God; therefore, her magic is in an eminent sense white magic. But in fact this makes no difference in result and in practice. She was reserved and secretive, as was necessary at her time: but still it can be seen that for her the matter is not merely a theoretical corollary, but has originated from other kinds of knowledge and experiences. The most important passage is in her *Revelation of Revelations*, German translation, Amsterdam, 1695, from pp. 126 to 151, especially on the pages that are headed 'Power of the Calm Will'. From this book in his *Library of Magic*,[a] Vol. 1, p. 325, *Horst* quotes the following passage, which, however, is more a paraphrase[b] than a literal quotation and is primarily taken from p. 119, §§ 87 and 88: 'Magical power puts one who possesses it in the position to rule over and renew creation, i.e., the plant, animal, and mineral kingdoms, so that, if *many* cooperated *in one* magical power, nature could be recreated into a paradise…How are we to achieve this magical power? In rebirth through faith, i.e., through the harmony of our *will* with the divine *will*. For faith subjects the world to us insofar as the harmony of our *will* with that of God has the effect that everything, as Paul says, is ours and [124] must obey us.’ Thus far *Horst's* paraphrase. – On p. 131 of the above-mentioned work, J. Leade explains that Christ performed his miracles through the power of his will, as when he said to the leper: ‘“I *will*: be cleansed.”[c] Sometimes, however, he left it to the will of those he recognized as having faith in him, as he said to them: “what do you *will* that I do for you?”[d] And then no less was done for them than what they longed in their wills to have their Lord do. These words of our saviour deserve our careful attention, since *the greatest magic lies in will*, insofar as our will is in unity with the will of the highest; when these two wheels fit one another and become one, so to speak, they are’ etc.[146] – On p. 132 she says: ‘for what could withstand a will that is unified with God's will? Such a will has the power to carry out its purpose everywhere. It is *no naked will*, devoid of its clothing, of power; rather, it carries in itself an insuperable omnipotence, whereby it can uproot and plant, kill and bring to life, bind and loose, heal and injure, a power collected and concentrated in its entirety in the royal, free-born will, a power we will come to know after we make ourselves one with the holy ghost, or are united as one spirit and being.’ – On p. 133 we have: ‘we must quench or drown altogether the many and manifold wills that arose out of the mixed essence of souls, and lose them in the abysmal depths out of which the *virgin will* will then arise and make its appearance, which has never been something enslaved, belonging to the degenerate human, but is completely free and pure, standing in unity with the omnipotent power, and will unfailingly produce fruits and results like unto itself…from which the burning oil of the holy ghost flares up in the *magic* that casts its sparks.’[147]

Jakob Böhme, too, in his *Explanation of Six Points*,[e] under point [125] V, speaks of magic absolutely in the sense presented here. Among other things, he says: ‘Magic is the mother of the being of all beings, for it makes itself and is understood in *desire*…True magic is not a being, but the *desiring spirit* of the being…In sum: Magic is action in the *spirit of will*’.[148]

As a corroboration, or in any case, as an explanation of the view presented here of the will as the true agent of magic, this may be the place for a strange and fitting anecdote that *Campanella* repeats in *On the Sense of Things and Magic*,[a] Book IV, ch. 18, following *Avicenna*: ‘Some women had arranged to go to a pleasure garden. One of them did not come. As a joke, the others took an orange and pierced it with sharp needles, saying "Thus we pierce the woman who has refused to come with us"; thereupon they threw the orange in a well and went off. They then found that woman in pain because she had the feeling as if she were being pierced by sharp needles since the very hour in which the others had pierced the orange; and thus she was in great pain until the others extracted the needles from the orange while wishing her good health and well being.'[b]

In his *Trip Around the World*, edition in 12°, 1812, Pt. 1, pp. 249ff., *Krusenstern* provides a very remarkable, exact description of deadly sorcery that the priests of the savages on the island of Nukuhiva practise, allegedly with success, and the procedures of this sorcery are wholly analogous to our sympathetic cures.[*],[149] – This description is particularly noteworthy insofar as the matter [126] appears to be just the same here, far removed from all European tradition. This should particularly be compared to what *Bende Bendsen* says in Kieser's *Archives for Animal Magnetism*, Vol. 9, Pt. 1, in the note on pp. 128–32, about headaches that he himself has conjured up in another by means of a lock of hair; he concludes the note with the following words: 'the so-called witch's art, so far as I have been able to find out, consists in nothing other than the preparation and application of harmful magnetic means in connection with an *evil influence of the will*: this is the loathsome pact with Satan.'[150]

The agreement of all these authors, both with one another and with the convictions that animal magnetism has led to in recent times, and finally also with what could be a result of my speculative theory in this regard, is truly a phenomenon to be carefully considered. This much is certain: that an anticipation of my metaphysics underlies all of the attempts at magic that have been made, be they successful or unsuccessful, as in them the awareness was expressed that the causal law is only the bond of appearance, but the essence in itself of things remains independent from this law; and that, if from this essence, that is, from within, an *immediate* effect on nature is possible, it could be brought about only through [127] *will* itself. But even if one wanted, following Bacon's classification, to assert magic as practical metaphysics, then it would be certain that the theoretical metaphysics that could be correctly related to it could be no other than my resolution of the world into will and representation.

The cruel zeal with which the church has at all times persecuted magic, and to which the papist 'witches' hammer'[a] bears terrible witness, seems not merely to be based on the criminal intent often connected to it, nor on the presupposed role of the devil in it, but rather to proceed in part from a dark presentiment and apprehension that magic assigns the original power[b] to its correct source once again, whereas the church had assigned it to a position outside of nature.[*],[151] This suspicion is corroborated by the hatred of animal magnetism on the part of the highly cautious English clerics,[*],[152] as well as by their active, zealous opposition to table turning, which in any case is harmless, yet against which the clergy in France as well as in Germany continue to cast their anathema for the same reason.[**],[153]

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a *dies diem docet* [literally 'one day teaches [another] day']

b *Agens*

[*] I will mention only *one* very recent work that has the express purpose of proving that the will of the magnetist is actually what is working: *Qu'est-ce que le Magnétisme?* [*What is Magnetism?*] by E. Gromier, Lyon: [L. Biotel], 1850

[**] But in 1784 *Puységur* already said '*Lorsque vous avez magnétisé le malade, votre but était de l'endormir, et vous y avez réussi par le seul acte de volonté: c'est de même par un autre acte de volonté que vous le réveillez*' ['if one has magnetized the patient, then the purpose was to put him to sleep, and one achieved this simply through one's own act of will; and likewise one again awakens the patient through a new act of will'] (Puységur, *Magnét*[*isme*] *anim*[*al*], 2nd edn; (1820), 'Catéchisme magnétique', pp. 150–71)

a [*System des Tellurismus oder Thierischen Magnetismus. Ein Handbuch für Naturforscher und Ärtzte* (*System of Tellurism or Animal Magnetism. A*

Handbook for Natural Scientists and Physicians), Vol. 1, Leipzig: Herbig, 1822]

b *Annales du magnétisme animal*

c *L'action du magnétisme dépend de la seule volonté, il est vrai; mais l'homme ayant* une forme extérieure et sensible*, tout ce qui est à son usage, tout ce qui doit agir sur lui, doit nécessairement en avoir une, et pour que la volonté agisse, il faut qu'elle employe un mode d'action*

d *Objektität*

a *unbewußt*

b *Wahrheit aus Jean Pauls Leben*

***** In 1854 I had the good fortune to see the extraordinary feats of this kind by Mr *Regazzoni* of Bergamo here [Frankfurt]. In these feats the immediate, that is, magical, power of his will over others was unmistakable and astonishing to the greatest degree, and none could remain in doubt of their authenticity, except those to whom nature has completely denied all capacity for comprehending pathological conditions; however, there are such subjects, who must be made lawyers, ministers, merchants, or soldiers, but for heaven's sake not doctors, for the result would be fatal, since in medicine diagnosis is the primary thing. – He could put his somnambulist, who was under his influence, into complete *catalepsy*; in fact, merely through his will, without gestures, he could make her fall backwards as she walked forward and he stood behind her. He could paralyse her, put her in a state of tetanus [*Starrkrampf*], with dilated pupils, completely insensible, and the unmistakable signs of a completely cataleptic condition. He had a lady from the audience play the piano, and then standing 15 paces behind her, through his will, with gestures, paralysed her so she could not play. Then he put her against a column and charmed her so that she could not move from the spot despite the greatest effort. – *According to my observation* almost all of his tricks can be explained from the fact that he *isolates the brain from the spinal column*, either completely, whereby all sensible and motor nerves are paralysed and complete catalepsy occurs, or the paralysis affects only the *motor* nerves, while sensibility remains, so that the head retains consciousness atop a body apparently dead. Strychnine works in just the same way: it paralyses only the motor nerves to the point of complete tetanus, leading to death by suffocation; yet it leaves the sensible nerves, hence also the consciousness, undisturbed. *Regazzoni* does the same through the magical influence of his will. The moment of that *isolation* is clearly visible through a certain characteristic shuddering in the patient. Concerning *Regazzoni's* feats and their authenticity, which is undeniable to anyone for whom nature has not closed off all sense for understanding organic nature, I recommend a small French work by L. A. V. Dubourg, *Antoine Regazzoni of Bergamo in Frankfurt am Main*, Frankfurt, November 1854, 31 pages 8°

In the *Journal du magnétisme* [*Journal of Magnetism*], ed. Dupotet, of 25 August 1856, a review of a work *de la Catalepsie, mémoire couronné* [*On Catalepsy, crowned essay*], 4°, 1856, Morin, the reviewer, wrote ‘*La plupart des caractères qui distinguent la catalepsie peuvent être obtenus artificiellement et sans danger sur les sujets magnétiques, et c'est même là un des exercices les plus ordinaires des séances magnétiques*’ [Most symptoms that constitute catalepsy can be produced artificially and without danger in the magnetized subject, and this is even one of the most common practices in magnetic sessions]

a *Erster Blick in die Wunderwelt des Magnetismus*

b *Mittheilungen über die Somnambule Auguste K. in Dresden* [*Mittheilungen aus dem magnetischen Schlafleben der Somnambüle Auguste K.*], ed. Johann Karl Bähr und Rudolf Kohlschütter, Dresden and Leipzig: Arnold, 1843]

a *Sache*

b [Schopenhauer quotes the English ‘acted as jurors’ here]

c *actio in distans*

d *ein Wort über animalischen Magnetismus, Seelenkörper und Lebensessenz…oder physische Beweise, daß der animalisch-magnetische Strom das Element, und* der Wille das Princip alles geistigen und körperlichen Lebens sei

e *instaur*[*atio*] *magna*

f principle of individuation

g *vereitelt*

***** Pliny, *Historia Naturalis* [*Natural History* 30, 3]

a *Oratio de magia*

b [Balthasar Bekker]

c [Shakespeare, *Hamlet* I. v. 166–167]

***** The [*London*] *Times*, 12 June 1855, p. 10, reports:

> A horse-charmer.
>
> On the voyage to England the ship *Simla* experienced some heavy weather in the Bay of Biscay, in which the horses suffered severely, and some, including a charger of General Scarlett, became unmanageable. A valuable mare was so very bad, that a pistol was got ready to shoot her and to end her misery; when a Russian officer recommended a Cossack prisoner to be sent for, as he was a 'juggler' and could, by charms, cure any malady in a horse. He was sent for, and immediately said he could cure it at once. He was closely watched, but the only thing they could

observe him do was to take his sash off and tie a knot in it 3 several times. However the mare, in a few minutes, got on her feet and began to eat heartily, and rapidly recovered

** Pliny [*Historia Naturalis* (*Natural History*)] already cites a great many sympathetic cures in the 28th book, chs. 6–17

a *Archiv für den thierischen Magnetismus*

a [faith healers]

b Delrio, *Disq. mag.* [Martin Anthony Delrio, *Disquisitiones magicarum libri sex quibus continetur accurata curiosarum artium & vanarum superstitionum confutatio* (1599/1600)]

c Bodinus, *Mag. daemon.* [Jean Bodin, *De Magorum daemonomania s. detestando lamiarum ac magorum cum Satana commercio* (1581)]

d [*maleficium*: literally ‘evil-doing’; *fascinatio*: fascination, enchantment, sorcery]

e *übertragenen Krankheiten*

f *symposiacae quaestiones*

a *Ahndung*

b *Sinnesempfindung*

a *influxus physicus*

b *contradictio in adjecto*

c [Ak. 4: 450ff. Schopenhauer omits without note the following parenthetical remark as indicated by the translators' ellipses: '(perhaps merely by means of the difference noticed between representations given to us from somewhere else and in which we are passive, and those that we produce simply from ourselves, in which we show our activity)']

d *Disputatio de quaestione quae fuerit artium magicarum origo*, Marburg: [Krieger], 1787

a *nexum physicum*

b *nexum metaphysicum*

c *natura naturata*

d *natura naturans*

a [Goethe, *Faust* I, 1566–1569]

b *ursprüngliche*

c *in abstracto*

d *sich…geltend macht*

e *das Streichen* [hand gestures made by the animal magnetist *passing* magnets before a subject or as a magician *passes* a wand over an object]

f *nach Willkür*

***** Here and there Plotinus betrays a more correct insight, e.g., *Enneads* II, Book III, ch. 7; *Enneads* IV, Book III, ch. 12; and Book IV, chs. 40, 43; and Book IX, ch. 3

****** Delrio, *Disq. mag.* [see note b on p. 412 above], Book II, Pt. 2 – Agrippa a Nettesheym, *de vanit. scient.* [Agrippa von Nettesheim, *de vanitate scientiarum (On the Vanity of the Sciences*)], ch. 45. [‘Coercion of hell’ is *Höllenzwang*: works of this title were attributed by tradition to Dr Faust]

a *Magiker*

b *Zauberer*

a *das Metaphysische überhaupt*

a *Ursprünglichkeit*

b *Wirken*

c *Besprechen*

d *Dämonomagie*

a *Quod si ulterius aliqua anima maligna cogitat fortiter de infectione alterius, atque ardenter desideret et certitudinaliter intendat, atque vehementer consideret, se posse nocere, non est dubium, quin natura obediet cogitationibus animae*

b [Greater work]

a *Affenspiel*

b *astris*

a *de sensu rerum et magia* [Frankfurt: Apud Egenophum Emmelium, 1620] *Efficiunt alii ne homo possit futuere, si tantum credat: non enim* *potest facere quod non credit posse facere*

b *de occulta philosophia*

c *Non minus subjicitur corpus alieno animo, quam alieno corpori* [ch. 65]

d *Quidquid dictat animus fortissime odientis habet efficaciam nocendi et destruendi; similiter et in ceteris, quae affectat animus forti desiderio. Omnia enim quae tunc agit et dictat ex characteribus, figuris, verbis, sermonibus, gestibus et ejusmodi, omnia sunt adjuvantia appetitum animae et acquirunt mirabiles quasdam virtutes, tum ab anima operantis in illa hora, quando ipsam appetitus ejusmodi maxime invadit, tum ab opportunitate et influxu coelesti animum tunc taliter movente*

e *Inest hominum animis virtus quaedam immutandi et ligandi res et homines ad id quod desiderat, et omnes res obediunt illi, quando fertur in magnum excessum alicujus passionis, vel virtutis, in tantum, ut superet eos, quos ligat. Radix ejusmodi ligationis ipsa est affectio animae vehemens et exterminata*

f *de admir. naturae arcan.*[more fully *de admirandis naturae reginae deaeque mortalium arcanis*]

***** *Ibid.*, p. 440, *addunt Avicennae dictum:* '*ad validam alicujus imaginationem cadit camelus*' [citing *Avicenna's* expression: 'through vigorous thinking about it, one can bring down a camel']. *Ibid.*, p. 478, he speaks of making a man impotent, '*fascinatio ne quis cum muliere coeat*' ['an enchantment whereby a man cannot sleep with a woman'] and he says, '*Equidem in Germania complures allocutus sum vulgari cognomento necromantistas, qui ingenue confessi sunt, se firme satis credere, meras fabulas esse opiniones, quae de daemonibus vulgo circumferuntur, aliquid tamen ipsos operari, vel vi herbarum commovendo phantasiam, vel vi imaginationis et fidei vehementissimae, quam ipsorum nugacissimis confictis excantationibus adhibent ignarae mulieres, quibus persuadent, recitatis magna cum devotione aliquibus preculis, statim effici fascinum;*

quare credulae ex intimo cordis effundant excantationes, atque ita, non vi verborum, neque caracterum, ut ipsae existimant, sed spiritibus (*sc. vitalibus et animalibus* A. S.), *fascini inferendi percupidis exsufflatis proximos effascinant. Hinc fit, ut ipsi Necromantici, in causa propria, vel aliena, si soli sint operarii, nihil unquam mirabile praestiterint: carent enim fide, quae cuncta operatur.*' ['In Germany, I have spoken to many so-called necromancers, who openly acknowledge their firm conviction that the opinions that were current among the people regarding demons were mere idle talk, but they themselves confessed that they could have some success either by exciting the imagination through certain herbs, even if it was only through the power of the imagination, or of a very strong belief in the extremely absurd magic formulas they devised when they used these on ignorant women, whom they persuaded that if the women repeated certain prayers with great devotion, the magic would work right away; and when, in their credulity these women expressed the exorcisms from the depths of their hearts, it then happened that those in their vicinity were charmed not so much by the power of the words or of written signs, as the women believed, but through the (vital and animal A.S.) exhalations that the women breathed out with fervent longing. Thus it occurs that the necromancers themselves, when they go to work alone, in their own or other's affairs, never produce anything miraculous because they lack the faith that is capable of doing everything']

** 'Indeed, the devil has taught it

But the devil cannot do it'

[Goethe] *Faust* [I], p. 150 [2376–2377]

a *Vehementem imaginationem, cui spiritus et sanguis obediunt, rem mente conceptam realiter efficere, non solum intra, sed et extra*

b *Ortus medicinae*

a [§ 12] *Quum hostis naturae (diabolus) ipsam applicationem complere ex se nequeat, suscitat ideam fortis desiderii et odii in saga, ut, mutuatis istis mentalibus et liberis mediis, transferat suum velle per quod quodque afficere intendit. Quorsum imprimis etiam execrationes, cum idea desiderii et terroris, odiosissimis suis scrofis praescribit*

> [§ 13] *Quippe desiderium istud, ut est passio imaginantis, ita quoque creat ideam, non quidem inanem, sed executivam atque incantamenti motivam*
>
> [§ 19] *prout jam demonstravi, quod vis incantamenti potissima pendeat ab idea naturali sagae*

b *Saga, per ens naturale, imaginative format ideam liberam, naturalem et nocuam…Sagae operantur virtute naturali…Homo etiam dimittit medium aliud executivum, emanativum et mandativum ad incantandum hominem; quod medium est Idea fortis desiderii. Est nempe desiderio inseparabile ferri circa optata*

c *Ideae scilicet desiderii, per modum influentiarum coelestium, jaciuntur in proprium objectum, utcunque localiter remotum. Diriguntur nempe a desiderio objectum sibi specificante*

a *De magnetica vulnerum curatione. § 76. Igitur in sanguine est quaedam potestas exstatica, quae, si quando ardenti desiderio excita fuerit, etiam ad absens aliquod objectum, exterioris hominis spiritu deducenda sit: ea autem potestas in exteriori homine latet, velut in potentia; nec ducitur ad actum, nisi excitetur, accensa imaginatione ferventi desiderio, vel arte aliqua pari*. – § 98. *Anima, prorsum spiritus, nequaquam posset spiritum vitalem (corporeum equidem), multo minus carnem et ossa movere aut concitare, nisi vis illi quaepiam naturalis, magica tamen et spiritualis, ex anima in spiritum et corpus descenderet. Cedo, quo pacto obediret spiritus corporeus jussui animae, nisi jussus spiritum, et deinceps corpus movendo foret? At extemplo contra hanc magicam motricem objicies, istam esse intra concretum sibi, suumque hospitium naturale, idcirco hanc etsi magicam* *vocitemus, tantum erit nominis detorsio et abusus, siquidem vera et superstitiosa magica non ex anima basin desumit; cum eadem haec nil quidquam valeat, extra corpus suum movere, alterare aut ciere. Respondeo, vim et magicam illam naturalem animae, quae extra se agat, virtute imaginis Dei, latere jam obscuram in homine, velut obdormire (post praevaricationem), excitationisque indigam: quae eadem, utut somnolenta, ac velut ebria, alioqui sit in nobis quotidie: sufficit tamen ad obeunda munia in corpore suo: dormit itaque scientia et potestas magica, et solo nutu actrix in homine. – § 102. Satan itaque vim magicam hanc excitat (secus dormientem et scientia exterioris hominis impeditam) in suis mancipiis, et inservit eadem illis, ensis vice in manu potentis, id est sagae. Nec aliud prorsus Satan ad homicidium affert, praeter excitationem dictae potestatis somnolentae. – § 106. Saga in stabulo absente occidit equum: virtus quaedam naturalis a spiritu sagae, et non a Satana, derivatur, quae opprimat vel strangulet spiritum vitalem equi.* – § 139. *Spiritus voco magnetismi patronos, non qui ex coelo demittuntur, multoque minus de infernalibus sermo est; sed de iis, qui fiunt in ipso homine, sicut ex silice ignis: ex voluntate hominis nempe aliquantillum spiritus vitalis influentis desumitur, et id ipsum assumit idealem entitatem, tanquam formam ad complementum. Qua nacta perfectione, spiritus mediam sortem inter corpora et non corpora assumit. Mittitur autem eo, quo voluntas ipsum dirigit: idealis igitur entitas…nullis stringitur locorum, temporum aut dimensionum imperiis, ea nec daemon est, nec ejus ullus effectus; sed spiritualis quaedam est actio illius, nobis plane naturalis et vernacula. – §* 168. *Ingens mysterium propalare hactenus distuli, ostendere videlicet, ad manum in homine sitam esse energiam, qua, solo nutu et phantasia sua, queat agere extra se et imprimere virtutem aliquam, influentiam deinceps perseverantem, et agentem in objectum longissime absens*

a *de incantationibus, Opera* Basil. [Henripetrina] 1567, p. 44…*Sic contigit, tales esse homines, qui habeant* [123] *ejusmodi vires in potentia, et per vim imaginativam et desiderativam cum actu operantur, talis virtus exit ad actum, et afficit sanguinem et spiritum, quae per evaporationem petunt ad extra et producunt tales effectus*

a *Zauberbibliothek*

b *résumé*

c [Matthew 8: 3]

d [Matthew 20: 32]

e *Erklärung von sechs Punkten*

***** Krusenstern says: ‘A universal belief in witchcraft, regarded by all islanders as very important, appears to me to have some connection to their religion, for it is only the priests who, according to their claim, have mastery over this magical power, although it is said that some of the people pretend to possess the secret, probably to be able to make themselves frightful and extort gifts. This sorcery, which they call *Kaha*, consists of some means of slowly killing someone against whom they have a grudge, twenty days being the fixed term for this. Here is how they go about this. Whoever wants revenge through magic tries to obtain some of the saliva, urine, or excrement of his enemy. This he mixes with a powder, burying the mixed substance in a bag that has been woven in a special way. The most important secret consists in the art of correctly weaving the bag and in the preparation of the powder. As soon as the bag is buried, the effects show themselves in the one on whom the spell was cast. He becomes sick, more feeble day by day, ultimately completely losing his strength, and after twenty days he certainly dies. However, if he tries to deflect his enemy's revenge, and uses a pig or some other important gift to ransom his life, then he can still be saved, even on the nineteenth day, and then as the bag is dug up, the attacks of the disease immediately cease. He gradually recovers and in a few days is completely restored’

a *de sensu rerum et magia*

b *Mulieres quaedam condixerunt, ut irent animi gratia in viridarium. Una earum non ivit. Ceterae colludentes arangium acceperunt et perforabant eum stilis acutis, dicentes: ita perforamus mulierem talem, quae nobiscum venire detrectavit, et, projecto arangio intra fontem, abierunt. Postmodum* *mulierem illam dolentem invenerunt, quod se transfigi quasi clavis acutis sentiret, ab ea hora, qua arangium ceterae perforarunt: et cruciata est valde donec arangii clavos extraxerunt imprecantes bona et salutem*

* They got wind of something like this from

Nos habitat, non tartara, sed nec sidera coeli:
Spiritus, in nobis qui viget, illa facit.
It lives in us, not in hell, and also not in the stars in the heavens
The spirit that lives in us directs everything.

(See *Johann Beaumont*, *Historical--Physiological and Theological Tract on Spirits, Appearances, Witches and other Sorceries*, Halle im Magdeburgischen, 1721, p. 281.) [Schopenhauer provides a German translation of the above Latin from Agrippa von Nettesheim, *Epistles* v, 14. He used these lines also as the motto for the the Second Book of *WWR* 1 in its second edn (1844)]

a *Malleus maleficarum*

b *Urkraft*

* Cf. *Parerga* [*and Paralipomena*], Vol. 1, p. 257 [Hübscher *SW* 5, 286]

** On 4 August 1856 the Roman Inquisition sent to all bishops an encyclical in which the Inquisition demanded in the name of the church that the bishops work with all their powers against the practice of animal magnetism. The reasons for this are given with a striking lack of clarity and precision, and here and there a lie, and one notes that the *Sanctum officium* is reluctant to give the real reason. (In December 1856 the encyclical was printed in the *Turin Press*, then in French in the *Univers*, and then in the *Journal des Débats* [*Journal of Debates*], 3 January 1857)

[128] Sinology

Nothing speaks so directly for the high standing of the civilization of China than the almost unbelievable size of its population, which, according to Güzlaff's statement, is now estimated at 367 million inhabitants.[*,154] For, if we wish to compare ages or countries, we will see that on the whole civilization keeps pace with population.

The obtrusive eagerness of the seventeenth- and eighteenth-century Jesuit missionaries to teach their own comparatively new religious doctrines to ancient peoples, along with their zealous striving to seek earlier traces of these doctrines in China, prevented them from becoming thoroughly informed about the religious doctrines prevailing there. [129] Therefore Europe did not gain knowledge of the state of religion in China until our times. We know that there is first of all a national worship of nature,[a] which is embraced by all and which stems from ancient times, allegedly even from times when fire had not yet been discovered and so animal sacrifices were offered up raw. To this worship belong the sacrifices that the emperor and great dignitaries publicly offered at set times or after great events. Above all, these sacrifices are devoted to the blue skies and the earth, the former at the winter solstice, the latter at the summer solstice, and after that to all possible natural powers, such as the sea, mountains, rivers, winds, thunder, rain, fire, etc. in each of which there presides a genius for whom there are numerous temples; these are also dedicated to the presiding genius of any province, city, town, street, even a family burial plot, indeed, sometimes a shop; these latter obviously receive only private worship. But besides, public worship is offered to the great, former emperors, the founders of dynasties, as well as heroes, i.e. all those who through teaching or deed had been benefactors of (Chinese) humanity. These too have temples; Confucius alone has 1650 of them. Thus there are many small temples all over China. This worship of heroes is connected to private worship, which every respectable family offers to its forebears at the grave site.[155] – Besides this general nature and hero worship, and for more dogmatic purposes, there are three religious doctrines in China. First, the doctrine of the *Taosee*, founded by *Laotse*, an older contemporary of Confucius. It is the doctrine of reason, as the inner world order or inherent principle of all things, the great one, the lofty gable beam (*Taiki*) that bears all the rafters and yet stands over them (actually the all-pervading world soul), and the *Tao*, i.e. the *way*, namely to salvation, i.e. to redemption from the world and its misery. A description of this teaching was given to us in the year 1842 by Stanislas Julien in the translation of *Laotseu Taoteking*, from which we see that the sense and spirit of the doctrine of the Tao completely agrees with that of Buddhism. [130] Nonetheless, this sect now appears to have receded into the background and its teachers, the Taosee, to have been scorned. – Secondly we find the wisdom of Confucius, of which scholars and statesmen are especially fond; to judge from the translation, it is a broad, commonplace, and predominantly political and moral philosophy, without the support of metaphysics, and there is something quite specifically dull and tedious about it. – Finally, for the great masses of the nation, there is the sublime and loving doctrine of Buddha, whose name, or perhaps title, in China is pronounced *Fo* or *Fuh*, while in Tartary the victoriously perfect one is called more by his family name, Shakia-Muni, but also Burkhan-Bakshi, then among the Burmese and in Ceylon he is mostly called Gótama, also Tatágata, but was originally called Prince Siddharta.[*],[156] This religion (which, for [131] its[157] intrinsic excellence and truth, as well as to its overwhelming number of followers, is to be considered the most distinguished on earth) prevails in the greatest part of Asia and, according to Spence Hardy, the most recent researcher, numbers 369 million faithful,[158] thus by far more than any other religion.[159] – These three religions of China (of which the most widespread, Buddhism, much to its credit, supports itself through its own power without any protection of the state) are far [132] from being hostile towards one other, but coexist peacefully; indeed, perhaps through reciprocal influence, they are in a certain harmony with one another, so that there is even a proverbial saying that ‘the three teachings are just one’. The emperor, as such, professes all three; however, many emperors, down to the most recent time, have been especially devoted to Buddhism, as is evidenced by their profound reverence for the Dalai-Lama and even for the Teschu-Lama, to whom they give unfailing preeminence.[160] – None of these three religions is either monotheistic or polytheistic, and Buddhism at least is also not pantheistic, since Buddha did not regard a world sunk in sin and suffering, whose beings are all subject to death, to be a theophany. Moreover, the word 'pantheism' actually contains a contradiction, indicating a self-defeating concept,[a] which those who understand it seriously have never taken in any other way than as a euphemism; for this reason it never occurred to the clever and acute philosophers of the previous century not to consider Spinoza an atheist just because he calls the world *Deus*; rather, the discovery that he is not this was reserved for the comic philosophers[b] of our time who know nothing but words, who pride themselves on this, and who accordingly speak of 'acosmism' – the clowns! But I would humbly advise that words be allowed to have their meaning, and when something else is meant, use a different word; thus call the world 'world' and gods 'gods'.[161]

The Europeans who took the trouble to acquire knowledge of the state of religion in China went about this as is usually the way, and as the Greeks and Romans did earlier in analogous circumstances,[162] first through points of contact with their own indigenous faiths. Now since to their way of thinking the concept of religion is almost identical with, or at least had become so closely connected with that of theism, it was not easy to separate them; moreover, before there was more accurate information about Asia the quite false opinion was spread in Europe, for the purpose of the argument 'by agreement of the peoples',[c] that all peoples [133] of the earth worshipped a single god, or at least a supreme god and creator of the world, which is the same as if the Chinese were made to believe that all the princes of the world paid tribute to their emperor;[163] and since they found themselves in a country where they saw temples, priests, large numbers of monasteries and religious customs in frequent practice, they started from the strong assumption that they had to find theism here, too, although in a very strange form. But once they saw their expectation disappointed and found that there was no concept of such things, that there were even no words to express them, it was natural, given the spirit in which they conducted their inquiries, that their first information about these religions consisted more in what they did *not* contain than in their positive content, of which, for many reasons, it must have been very difficult for European minds to make much sense; because, e.g., they had been brought up in optimism, whereas in Asia, in contrast, existence is seen as an evil and the world as a scene of misery in which it would be better not to appear; and because of the essential, decided idealism of Buddhism, as well as

Hinduism, a view that is known in Europe as a paradox of certain eccentric philosophers, hardly to be taken seriously, but which in Asia is even incorporated in popular belief, since in Hindustan it is generally accepted as the doctrine of *mâyâ*, and in Tibet, the principal seat of the Buddhist church, it is even presented in an extremely popular way, with a religious comedy being performed on an occasion of great solemnity, in which the Dalai-Lama is presented in controversy with the arch-fiend, the former upholding idealism, the latter realism, saying among other things, 'what is perceived through the five sources of all cognition (the senses) is no delusion, and what you teach is not true'. After a long dispute, the matter is finally decided by casting dice, the realist, i.e., the devil, loses and is chased away to general derision.[*],[164] If these fundamental differences [134] in the whole way of thinking are kept in mind, it is excusable, even natural to find that, as they researched the religions of Asia, the Europeans at first held to a negative standpoint, one actually foreign to the matter, which is why we find numerous remarks referring to the negative, but absolutely not advancing positive knowledge, all of which amount to the fact that monotheism – obviously a decidedly Jewish doctrine – is foreign to the Buddhists and to the Chinese in general.[165] E.g. in *Lettres édifiantes* (edition of 1819, Vol. 8, p. 46) we find: 'Buddhists, whose opinion on the transmigration of souls has been universally accepted, are accused of atheism', and in *Asiatic Researches*, Vol. 6, p. 255, 'the religion of the Burmese (i.e. Buddhism) shows that they are a people already far removed from the ignorance of savagery, and in all of their actions in life are under the influence of religious opinions, but nevertheless have no knowledge of a supreme being, the creator and sustainer of the world. However the moral system that their fables recommend is perhaps just as good as any of those that are preached among the religious doctrines prevailing among the human race.' – And in the same, p. 258, 'Gotama's (i.e. Buddha's) adherents are, to put it precisely, atheists'. – And in the same, p. 180, 'Gotama's sect regards faith in a divine being who created the world as highly irreligious (*impious*)'. – And in the same, p. 268, Buchanan mentions that the Zarado, or the high priest of the Buddhists in Ava, Atuli, in an article on his religion that he submitted to a Catholic Bishop, counts among the six damnable heresies the doctrine 'that there is a being who created the world and all things in the world and who alone is worthy to be worshipped'. In his *Description of the Burmese Empire*, Rome, 1833, p. 81, *Sangermano* reports exactly the same thing, and he concludes his account of the six grave heresies with the words: 'the last of these impostors taught that there exists a Supreme Being, the Creator of the world and all things [135] in it, and that he alone is worthy of adoration.'[a] In his 'Essay on the Philosophy of the Hindus', found in the *Transactions of the Royal Asiatic Society*, Vol. 1, and also printed separately in his *Miscellaneous Essays*, Colebrooke also says, p. 236: 'the sects of Jain and Buddha are actually atheistic because they do not recognize a creator of the world or a supreme, governing providence.' – J. J. Schmidt likewise says, in his *Investigation of the Mongols and Tibetans*, p. 180: 'the system of Buddhism does not know a single, divine being, eternal and without origin, who existed before all time and created everything visible and invisible: this idea is completely foreign to Buddhism, and not the slightest trace of it can be found in Buddhist texts.'[166] – No less do we see the learned sinologist *Morrison* in his *Chinese Dictionary*, Macao, 1815[b] and the following years, Vol. 1, p. 217, eager to discover any trace of a god in Chinese dogmas and ready to put the most favourable light possible on everything that seems to indicate as much; however, finally he admits that there is clearly nothing of the sort to be found in them. And in the same place, pp. 268ff., on explaining the words *Thung* and *Tsing*, i.e., rest and motion, on which the Chinese cosmology is based, he renews this investigation and closes with the words, 'perhaps it is impossible to absolve this system of the accusation of atheism'. – Still more recently *Upham* says in his *History and Doctrine of Buddhism*, London, 1829, p. 102: 'Buddhism presents to us a world without a moral ruler, guide, or creator.'[167] The German sinologist *Neumann* also says in his essay, cited more specifically below, pp. 10 and 11, 'in China, in whose language neither Muslims nor Christians found a word to refer to the theological concept of the godhead'…'The Chinese language knows absolutely nothing of the words "god", "soul", "spirit", as something independent of matter and governing it at will'…'This train of thought is so intimately connected with the language that it is impossible without lengthy circumlocution to translate the first verse of Genesis into [136] Chinese in such a way that it is actually Chinese.' – Sir George Staunton, 1848, has published a book about just this, entitled:[a] *An Inquiry into the Proper Mode of Rendering the Word God in Translating the Sacred Scriptures into the Chinese Language*.[*],[168] With this discussion and these quotations my intention has been solely to introduce and make more intelligible the highly noteworthy position that it is the purpose of the present chapter to impart, by making present to the reader the standpoint from which those investigations took place and thus explaining their relationship to their subject matter. For when the Europeans researched in China by the method and in the sense mentioned above, with their questions always directed to the supreme principle of all things, the power having dominion over the world, etc. they were often told about what is indicated by the word *Tien* (English *T'hëen*). Now the closest equivalent to this word is 'heaven', as Morrison also states in his dictionary. Only it is sufficiently well known that the word is also used figuratively and then receives a metaphysical sense. Already in the *Lettres édifiantes* (edition of 1819, Vol. 11, p. 461) we find this explanation of the point: '*Hing-tien* is material and visible heaven; *Chin-tien* the spiritual and invisible heaven.' Sonnerat [137] too, in his *Journey to East India and China* says, 'as the Jesuits disputed with other missionaries whether the word *Tien* means "heaven" or "god", the Chinese viewed these foreigners as an unruly people and chased them to Macao'. In any case this word first enabled the Europeans to hope they were on the tracks of the long-sought analogy between Chinese metaphysics and their own faith, and investigations of this sort are without a doubt what led to the result that we find imparted in an article entitled 'Chinese Theory of Creation', in the *Asiatic Journal*, Vol. 22, in 1826.[a] I note about *Tschu-fu-tze*, also called *Tschu-hi*, mentioned in this article, that he had lived in the twelfth century of our calendar and is the most renowned of all Chinese scholars because he brought together and systematized the collective wisdom of his predecessors. His work is the basis of present Chinese instruction and his authority is of the greatest weight.[169] In the place cited above it also says the following on pp. 41 and 42: 'The word *Teen* would seem to denote "the highest of the great" or "above all what is great on earth": but in practice its vagueness of signification is beyond all comparison greater, than that of the term *Heaven* in European languages…Choo-foo-tze tells us that "that heaven has *a man* (i.e. a sapient being) there to judge and determine crimes, should not by any means be said; nor, on the other hand, must it be affirmed that there is nothing at all to exercise a supreme control over these things."'

‘The same author being ask'd about *the heart of heaven*, whether it was intelligent or not, answer'd: it must not be said that the mind of nature is unintelligent, but it does not resemble the cogitations of man…

‘According to one of their authorities, *Teen* is call'd ruler or sovereign (choo), from the idea of the supreme control, and another expresses himself thus: “had heaven (Teen) no designing mind, then it must [138] happen, that the cow might bring forth a horse, and on the peach-tree be produced the blossom of the pear.” On the other hand it is said, that *the mind of Heaven is deducible from what is the Will of mankind!*’ (By the exclamation mark, the English translator wanted to express his astonishment.) I give the text.[b]

The agreement of this last statement with my theory is so striking and astonishing, that, had this passage not been printed fully eight years after the appearance of my work, it could well be claimed that I had taken my fundamental idea from it. For as is well known, there are three main bulwarks of defence against new thoughts: to pay no heed, to give no credence, and finally to assert that it had already long existed. But the independence of my fundamental thought from this Chinese authority is established by the reasons given: for one would hope it would be believed that I am not familiar with the Chinese language, [139] so I am not in a position to derive thoughts from original Chinese works unknown to others for my own use. On further investigation I have discovered that the passage cited above quite probably, indeed, almost certainly has been taken from Morrison's Chinese dictionary, where it is to be found under the character *Thien*: I lack only the opportunity to verify it.[*,170] – *Illgen's Journal for Historical Theology*,[a] Vol. 7, 1837, contains an article by *Neumann*, ‘The Chinese Philosophy of Nature and Religion, According to the Works of *Tschu-hi*’, in which, on p. 60 to 63, there are passages that obviously have a common source with those cited here from the *Asiatic Journal*. But they are written with the indecisiveness, so common in Germany, that prevents clear understanding. Moreover it can be noted that the translator of Tschu-hi has not completely understood his text; however, he is not to be reproached considering the very great difficulty of this language for Europeans and the inadequacy of the aids in learning it. Still from it we cannot gain the enlightenment we desired. We must, therefore, take solace in the hope that with increasingly unrestricted intercourse with China, some English person will give us more precise and thorough information about the dogma, mentioned above, which has been communicated with such lamentable brevity.[171]

* According to an official Chinese *census* report printed in Beijing, which the English found in 1857 when they invaded Canton and the palace of the Chinese governor, China had 396 *million* inhabitants in 1852, and with steady growth 400 million can now be assumed. – The *Moniteur de la Flotte* reported this at the end of May in 1857 –

> According to the report of the Russian spiritual mission to Beijing, the official count of 1842 gave China's population at 414, 687, 000 (according to the *Revue Germanique*)

> According to the official tables published by the Russian Embassy in Beijing, in the year 1849 the population amounted to 415 *million* (*Postzeitung* 1858)

a *nationalen Naturkultus*

* For the benefit of those who want to gain closer acquaintance with Buddhism, I will list here those publications from the relevant literature in European languages which, because I own and am familiar with them, I can truly recommend; some others, for example those by Hodgson and A. Rémusat, I omit on purpose. 1) *Dsanglun, oder der Weise und der Thor*, in Tibetan and German, by J[saak] J[akob] Schmidt, St Petersburg: 1843, 2 vols., 4°, contains in the Preface to the first (i.e. Tibetan) volume from pp. XXXI to XXXVIII, a very short but excellent summary of the entire teaching, very useful for a first acquaintance with it; also, the entire book is to be recommended as a part of the *Kandshur* (canonical books). –2) By the same excellent author, there are several German lectures about Buddhism, held between 1829 and 1832, and later given in the Academy of St Petersburg, to be found in the relevant volumes of the proceedings of the academy. Since they are extremely valuable for knowledge of this religion, it is very desirable that they be printed together and be published

in Germany. – 3) By the same author: *Forschungen* [*im Gebiete der älteren religiösen, politischen, und litterarischen Bildungsgeschichte der Völker Mittelasiens, vorzüglich*] *über die* [*der*] *Tibeter und Mongolen*, St Petersburg, 1824. – 4) By the same author: *Über die Verwandtschaft der gnostisch-theosophischen Lehren mit* [*den Religionssystemen des Orients, vorzüglich*] *dem Buddhaismus*, 1828. – 5) By the same author: *Geschichte der Ost-Mongolen* [*und ihres Fürstenhauses verfaßt von Ssanang Ssetsen Chung-Taidschi der Ordurs*], St Petersburg, 1829, 4° (very instructive, especially in the explanations and the appendix, which provide lengthy extracts from religious writings, in which many passages clearly present the profound sense of Buddhism and breathe its genuine spirit). – 6) Two essays by [Franz Anton] Schiefner, in German, in the *Mélanges Asiatiques tirés du Bulletin historico-philologique de l'académie de St Pétersburg*, Vol. I., 1851. – 7) *Samuel Turner's* [*Capitains in Diensten der ostind. Compagnie Gesandtschafts*] *reise an den Hof des Teshoo Lama* [*durch Bootan und einen Theil von Tibet*, translated from the English, Hamburg: B. J. Hoffmann], at the end of 1801. – 8) [Jean Jacques] Bochinger, [*Sur la connexion de*] *la vie* [*contemplative*,] *ascétique* [*et monastique*,] *chez les Indous et* [*chez*] *les* [*peuples*] *Bouddhistes*, [*avec les phénomènes semblables que présente l'histoire de l'islamaisme et du christianisme*], Strasbourg, 1831. – 9) In Vol. 7 of the *Journal Asiatique*, 1825, there is an extremely fine biography of the Buddha by [Michel-Ange André] *Deshauterayes*. – 10) [Eugène] Burnouf, *Introd*[*uction*] *à l'hist*[*oire*] *du Buddhisme* [*Indien*], Vol. 1, 4°, 1844. – 11) *Rgya Tsher Rolpa* [*Rgya Tch'er Rol Pa, ou Développement des jeux, concernant l'histoire du Bouddha Çakya-Mouni*], translated from the Tibetan by [Philippe-Edouard] Foucaux, [Paris], 1848, 4°. This is the *Lalitavistara*, i.e., Buddha's life, the gospel of the Buddhists. – 12) *Foe Koue Ki, relation des royaumes Bouddhiques*, translated from the Chinese by [Jean-Pierre] Abel Rémusat. 1836. 4°. – 13) *Déscription du Tubet*, translated from the Chinese into Russian by [Hyacinthe] Bitchourin and from Russian into French by [Heinrich Julius] Klaproth [Paris], 1831. –14) [Heinrich Julius] Klaproth, *fragmens Bouddhiques*, offprint from the *Nouveau Journal Asiatique*, March 1831. – 15) [Friedrich] Spiegel, [(Kammavakya) *Liber*] *de officiis sacerdotum Buddhicorum*, edited and translated into Latin [Königsberg], 1841. – 16) By the same author, *Anecdota Pâlica*, [Leipzig: Wilhelm Engelmann], 1845. – 17) *Dhammapadam* [*Dhammapada*], ed.

and translated into Latin by [Viggo Michael] Fausböll [Fausbøll] – 18) *Asiatic Researches*, Vol. 6. [Francis] Buchanan[-Hamilton], ‘On the Religion of the Burmas’; and Vol. 20, Calcutta, 1839, P. 2, contains three very important essays by *Csoma Kőrösi*, which contain analyses of books of the Kanjur. – 19) [Pater Vincentius] Sangermano, [*A Description of*] *the Burmese Empire* [translated by William Tandy, London: John Murray & Parbury, Allen & Co.] Rome, 1833. – 20) [George] Turnour, [*The first twenty chapters of*] *the Mahawanzo.* Ceylon [Cotta Church Mission Press], 1836. – 21) [Edward] Upham, *The Mahavansi, Raja Ratnacari and Rajavali*, 3 Vols., 1833. – 22) The same author's [*The History and*] *Doctrine of Buddhism* [London], 1829, folio. – 23) [Robert] Spence Hardy, *Eastern Monachism* [London: Partridge & Oakey], 1850. – 24) The same author's *Manual of Buddhism* [London: Partridge & Oakey], 1853. These two excellent books, written by their author after he stayed for twenty years in Ceylon and received verbal instruction from priests, have given me more insight into the inner meaning of Buddhist doctrine than any others. They deserve to be translated into German, but not abbreviated, because the best could easily be omitted. – 25) ‘Leben[sbeschreibung] des Buddha[s Schakjamuni]’ from the Chinese by [O.] *Palladji* [Petr Iwanowitch Kafarow], in the *Archiv für wissenschaftliche Kunde von Rußland*, edited by [Adolph] Erman, Vol. 15, P. 1, 1856. – 26) C[arl] F[riedrich] Köppen, *Die Religion des Buddha* [*und ihre Enstehung*], 1859, a complete collection on Buddhism, containing everything essential to the subject, having been compiled with great assiduousness and with understanding and insight from all the works mentioned here and from many others as well

a *selbst aufhebenden Begriff*

b *Spaaßphilosophen*

c *e consensu gentium*

* *Déscription du Tubet* [*Description of Tibet*], translated from Chinese into Russian by Bitchourin, and from the Russian into French by Klaproth,

Paris, 1831, p. 65. – Also in *Asiatic Journal*, New Series, Vol. 1, p. 15. – Köppen, *Die Lamische Hierarchie* (1859), p. 315

a [Schopenhauer provides his own German translation followed by Tandy's English translation of Sangermano]

b [Robert Morrison, *Dictionary of the Chinese Language,* Macao: East India Company, 1815]

***** The following statement by an American sailor who had come to Japan is amusing for the naïveté with which he presupposes that humankind must consist exclusively of Jews. In the *Times* of 18 October 1854, there is a report that an American ship under Captain Burr arrived at Jeddo Bay in Japan, and his report speaks of his favourable reception there. At the end it says: ‘He likewise asserts the Japanese to be a *nation of Atheists*, denying the existence of a God and selecting as an object of worship either the spiritual Emperor at Meaco, or any other Japanese. He was told by the interpreters that formerly their religion was similar to that of China, but that the belief in a supreme Being had latterly been entirely discarded (that is a mistake) and they professed to be much shocked at Deejunokee (a somewhat Americanized Japanese) declaring his belief in the Deity, etc.’ [The two parenthetical remarks are Schopenhauer's]

a [Schopenhauer provides his own German translation of the title, followed by the English title]

a [Anonymous 1826. ‘Chinese Theory of the Creation’, *Asiatic Journal* 22: 41–5]

b [At this point, having already given the quoted passage in his own translation in German, Schopenhauer inserts the English text]

***** According to letters of von Doß of 26 February and 8 June 1857, the passages cited here are in Morrison's *Chinese Dictionary*, Macao, 1815, Vol. 1, p. 576 under the entry, 元 *Tëen*, in a somewhat different order, but nearly with the same words. Only the important passage at the conclusion deviates, reading, *Heaven makes the mind of mankind its mind: in most ancient discussions respecting Heaven, its mind, or will, was divined* (so it reads, and not *derived*) *from what was the will of mankind.* – Independently of Morrison's translation, Neumann translated the passage for Doß and this ending reads: ‘Heaven is usually revealed through the heart of the people’

[a] *Zeitschrift für historische Theologie*

[140] Reference to ethics

For reasons given at the beginning, corroborations of the remaining parts of my theory are excluded from the present task. However in the conclusion, I may be permitted a rather general reference to *ethics*.

Since long ago all peoples have recognized that the world, apart from its physical meaning, also has a moral one. Yet everywhere the matter has only come to a vague consciousness, which, as it sought expression, clothed itself in all sorts of images[a] and myths. These are religions. For their part, philosophers have at all times taken the trouble to achieve a clear understanding of the matter, and all of their systems, with the exception of the strictly materialistic ones, agree, despite all their other differences, that what is most important, indeed, what alone is essential in all of existence, that on which everything depends, the actual meaning, the turning point, the point of it all (if I may say so)[b] lies in the morality of human action.[c] But concerning the sense[d] of this, concerning the ways and means, concerning the possibility of the matter, they are all greatly at variance and face a dark abyss. From this it follows that moral-preaching is easy, moral-grounding difficult.[e] Precisely because this point is established through conscience, it becomes the touchstone of systems, since it is justly demanded of metaphysics that it be the support of [141] ethics, and now the difficult problem arises of demonstrating, contrary to all experience, that the physical order of things is dependent on a moral order, of discovering a connection between a force, effective according to eternal natural laws, a force that imparts stability[f] to the world and morality in the human breast. Thus here even the best are frustrated: *Spinoza* now and then tacks a doctrine of virtue onto his fatalistic pantheism by means of sophisms, but more often than not he leaves morality completely in the lurch. After theoretical reason is at an end, *Kant* has his categorical imperative, cobbled together out of mere concepts,[*] appear as *Deus ex machina* with an absolute ought, the mistake of which became quite clear when *Fichte*, who always took overbidding for outdoing, spun the same imperative into a complete system of *moral fatalism* with Christian--Wolffian prolixity and tediousness in his *System of Moral Philosophy*[a] and then presented it more briefly in his last pamphlet, *The Science of Knowledge in General Outline*, 1810.[b,172]

Now from this point of view a system that puts the reality of all existence and the root of all of nature in *will*, and in this shows the heart of the world, undeniably has at least a strong prejudice[c] in its favour. For by a direct and simple path it reaches, indeed already holds in its hand before it proceeds to ethics, that which others first seek to reach by long, circuitous, and doubtful paths. In truth it is never to be reached except by means of the insight that the power that drives and operates in nature, which presents this intuitive world to our intellect, is identical with will in us. The only metaphysics that is actually and immediately the support of ethics is the one that is originally ethical and already constructed out of the material of ethics, will; which is why I have much greater right than Spinoza to call my metaphysics 'ethics', for in Spinoza's case this title appears almost to be ironic and one could maintain that it bears the name as the Latin *lucus* bears its name, *a non lucendo*,[d] since he could only tack morals by means of sophisms onto a system from which it would never consistently result; and [142] mostly he denies it directly with shocking audacity (e.g. *Ethics* IV, proposition 37, scholium 2).[173] – Generally, I can boldly assert that a philosophical system was never so completely cut out of one piece as mine, without seams and patches. As I have said in the preface to it,[e] it is the unfolding of a single thought, which once again confirms the old 'whoever expresses the truth, expresses it simply'.[f,174] – Then it is still to be taken into consideration that freedom and responsibility, these two fundamental pillars of all ethics, can indeed be asserted in words, but certainly cannot be thought without presupposing the aseity of will. Whoever would dispute this, has first either to topple the axiom that the scholastics already propounded, *operari sequitur esse*[a] (i.e. from the nature of each being follow its actions), or to demonstrate as false the corollary from this axiom, *unde esse inde operari*.[b] Responsibility has freedom as its condition, but freedom has originality.[c] Since I *will* as I *am*, thus I must *be* as I *will*.[175] This aseity of will is the first condition of a seriously thought-out ethics, and Spinoza says correctly, 'that thing is called free, which exists solely by the necessity of its own nature, and of which the action is determined by itself alone'[d] (*Ethics* I, definition 7). To connect dependence regarding being and essence with freedom regarding action is a contradiction. If Prometheus were to call his poor creatures to account for their actions, they would quite correctly answer 'we could only act as we were, for our work flows from our nature. If our actions were bad, then it lies in our nature; it is your work: punish yourself.'[*,176] It is not different in the case of the indestructibility of our true being through death, which cannot be seriously conceived without thinking of the aseity of our true being, just as it can hardly be conceived without a fundamental separation of will from intellect. The latter point is a part of my philosophy, but Aristotle had already thoroughly proved the former (*On the Heavens*, I, 12) since he showed in detail that only that which does not arise can be imperishable, and the two concepts condition one another: 'These [143] follow from one another: that which is without origin is imperishable, and that which is imperishable is without origin…for originating and perishing follow from one another…If there is something which originated, it must be perishable.'[e] Thus it has been understood among all the ancient philosophers who taught the immortality of the soul, and it did not occur to any of them to want to attribute endless duration to a being that had in any way *originated*. The controversy in the church over preexistence, creation, and traducianism gives evidence of the embarrassment to which the opposite assumption leads.[177]

Furthermore, a point closely related to ethics is the optimism of all philosophical systems, which none can lack since it is obligatory, for the world wants to hear that it is praiseworthy and excellent, and philosophers want to please the world. It is different with me: I have seen what pleases the world, and I will not deviate a single step from the path of truth to please it. Thus on this point, too, my system differs from all the others and stands alone. But after all of them have completed their demonstrations and have sung their song of the best world, there finally arrives behind the system, as a tardy avenger of this injustice, like a spirit from the grave, like the stony guest to Don Juan,[a] the question of the origin of evil, of the monstrous, nameless evil, of the horrible, heart-rending misery in the world, and to settle such a costly account they become dumb or have nothing but words – empty, sonorous words. In contrast, if the existence of evil is already woven together with that of the world in the foundation of a system, then it need not fear this spectre, just as a vaccinated child need not fear smallpox. But this is the case if freedom is placed in the 'being' instead of the 'acting'[b] and then from freedom proceed wickedness, evil, and the world.[178] – But moreover it is reasonable that I, as a man in earnest, be permitted to speak only of things that I actually know, and only to use words to which I attach a quite definite sense, since only such meaning can be communicated to others with [144] certainty, and *Vauvenargues* is quite correct in saying 'clarity is the good faith of philosophers'.[c,179] Thus if I say 'will, will to life', then it is no mere being in thought[d] no hypothesis formulated by myself alone, and no word of uncertain, vacillating meaning; rather, whoever asks me what this is, I refer him to his own inner being, where he discovers it complete, indeed, in colossal dimensions, as a genuine 'most real being'.[e] Accordingly, I have not explained the world from what is unfamiliar, but from the most familiar thing there is,[f] from that which is familiar to us in a completely different way from everything else.[180] – Finally concerning the paradox with which the ascetic results of my ethics has been reproached – results which even *Jean-Paul* (who is otherwise so favourably inclined to me) took offence at, and by which even Mr *Rätze* (who did not know that against me only the method of secrecy is applicable) was prompted to write a well-intentioned book against me in 1820, and which have since become the standing theme of censure against my philosophy: I ask the reader to consider that such a result could only be called a paradox in this northwestern corner of the old continent, indeed even here only in protestant countries; conversely, over the whole of Asia, everywhere where detestable Islam has not yet driven out the ancient, profound religions of humanity with fire and sword, my ascetic results would have to fear the reproach of being trivial.[*] For this reason, I console myself that in connection with the Upanishad of the holy Vedas, as also with the world religion of Buddha, my ethics is completely orthodox; indeed, it is even not in contradiction with ancient, genuine Christianity. But I am armoured against all other charges of heresy, and I have three layers of steel breastplate.[181]

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a *Bilder*

b *die Pointe* (*sit venia verbo*) *desselben*

c *des menschlichen Handelns*

d *Sinn*

e [Schopenhauer used a variant of this expression as the motto for his Prize Essay on the Basis of Morality. See *BM*, 113]

f *Bestand*

***** See my prize essay *On the Basis of Morals*, § 6

a *System der Sittenlehre* [1789]

b *die Wissenschaftslehre im allgemeinem Umrisse* (1810)

c *Präjudiz*

d [Roman grammarians used this as an absurd etymology: as if *lucus* (a dark grove) takes its name from its not bringing light (*a non lucendo*) – the allegation being that the *Ethics* is called that because of its not containing any ethics]

e [i.e. *WWR 1*, 5 (Hübscher *SW* 2, VII)]

f ἁπλοῦς ὁ μῦθος τῆς ἀληθείας ἔφυ [Euripides, *The Phoenicians*, V, 469]

***** See *Parerga and Paralipomena*, I, pp. 115ff. [Hübscher *SW* 5, 129ff.]

a [acting follows from being]

b [the acting comes from where the being comes from]

c *Ursprünglichkeit*

d *ea res libera dicetur, quae ex sola suae naturae necessitate existit, et a se sola ad agendum determinatur*

e Ταῦτα ἀλλήλοις ἀκολουθεῖ, καὶ τό τε ἀγένητον ἄφθαρτον, καὶ τὸ ἄφθαρτον ἀγένητον…τὸ γὰρ γενητὸν καὶ τὸ φθαρτὸν ἀκολουθοῦσιν ἀλλήλοις…εἰ γενητόν τι, φθαρτὸν ἀνάγκη (*haec mutuo se sequuntur, atque ingenerabile est incorruptibile, et incorruptibile ingenerabile.…generabile enim et corruptibile mutuo se sequuntur.…si generabile est, et corruptibile esse necesse est*) [282a 30ff.; Schopenhauer provides this Latin translation of the Greek]

a [The reference is to Act II, Scene 17 of Mozart's *Don Giovanni*. In jest, Don Giovanni invites to a banquet the statue of the Commendatore, Donna Anna's father, whom he has killed. The statue comes, but refuses to eat. Yet the statue then invites Giovanni to dine with it. Giovanni grasps the statue's hand in acceptance. The statue does not release Giovanni, but demands that he repent. When Giovanni repeatedly refuses, he is carried off to hell]

b *esse…operari*

c *la clarté est la bonne foi des philosophes*

d *ens rationis*

e *ens realissimum*

f *Unbekannten…Bekanntesten*

* Whoever wants to be briefly and yet completely informed about this should read the excellent work of the deceased Pastor *Bochinger*: [*Sur la connexion de*] *la vie contemplative, ascétique et monastique, chèz les Indous et chèz les peuples Bouddhistes* [*Contemplative, ascetic and*

monastic life among the Indians and the Buddhist peoples] Strasbourg, 1831

[145] Conclusion

The surely striking corroborations of my theory enumerated in this treatise that have been provided by the empirical sciences since its appearance, but independently of it, are without a doubt joined by still many others that have not come to my knowledge. For how small is the portion of the literature of the natural sciences, carried on so actively in all languages, that the individual has sufficient time, opportunity, and patience to become familiar with. But what has been communicated here already gives me the assurance that the time of my philosophy is ripening, and with heartening joy I see how, over the course of years, the empirical sciences gradually appear as unquestionable witnesses for a theory about which the 'philosophers by profession' (some of them naïvely give themselves this characteristic name, and even that of the 'philosophical trade'[182]) have for seventeen years observed a politic[a] and inviolable silence, having left it to Jean-Paul,[*],[183] who is uninitiated in their politics, to speak about it. For it may have seemed risky to praise my philosophy, but upon more careful consideration, not all that safe to censure it, and it might have appeared unnecessary to make the public (which is not 'of the profession and trade') realize [146] that one could seriously philosophize without being either unintelligible or boring; thus, why should they have to compromise themselves with it, since certainly no one betrays himself by silence, and the preferred method of secrecy was at hand, as the approved means against the meritorious, and just enough was agreed upon that under the circumstances of that time my philosophy did not properly qualify to be taught from the lectern, which was after all the true and ultimate purpose of all philosophy, according to their heartfelt opinion – all this was so much and so certain, that if the stark naked Truth came down from lofty Olympus, yet whatever she brought were found not to be consistent with the requirements called for by the circumstances of the time or with the purposes of high-ranking superiors, the gentlemen 'of the profession and the trade' would waste no time with this indecent nymph, but would hurry her back to her Olympus with their compliments, then put three fingers on their lips and return undisturbed to their compendia. For of course, whoever courts this naked beauty, this alluring siren, this bride without dowry, must renounce the good fortune of being a state and university philosopher. He will become, if he is lucky, an attic philosopher. But instead of an audience of profit-driven career-seeking students he will have one consisting of rare, select thinkers who are sparsely scattered among the numberless masses, appearing singly in the course of time almost as freaks of nature. And in the distance, a grateful posterity beckons. But people must have no sense of how beautiful, how lovely is Truth, what joy lies in following her scent, what ecstasy lies in enjoying her, if they can imagine that those who have looked on her countenance could desert her, deny her, or disfigure her for the sake of their prostituted approval, their offices, their money, or even their titles of privy councillor.[a] One would sooner grind lenses, as did Spinoza, or draw water, as did Cleanthes. Thus they may take it as far as they want: Truth will not become different to please the 'trade'. Actually serious philosophy has outgrown the universities, where the sciences are placed under the guardianship of the state.[184] [147] Perhaps, however, it will come to be that philosophy will be counted among the occult sciences, while the spurious kind of philosophy, that *handmaid of theology*[b] of the universities, that inferior duplicate of scholasticism, whose supreme criterion is the philosophical truth of the national catechism, echoes more loudly in the lecture halls. – 'You, that way; we this way'.[c] – Shakespeare, *Love's Labours Lost*, the end.

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* *Finishing School to the Aesthetic Preparatory School* – The preceding refers to 1835, the time of the first edition of this essay. [Jean-Paul, *Kleine Bücherschau. Gesammelte Vorreden und Rezensionen, nebst einer kleinen Nachschule zur ästhetischen Vorschule* (*Short Book Reviews, Collected Prefaces and Reviews, Including a Little Finishing School to the Aesthetic Preparatory School*), Breslau: Josef Max & Company, 1825 pp. 197–204]

a *staatskluges*

a *Hofrath* [*Hofrat* or *Hofrätin* was a much sought-after honorary title, such as was afforded Schopenhauer's mother, Johanna]

b *ancilla theologiae*

c [Schopenhauer provides a German translation of the concluding line from Act v, scene 2]

Variants in different editions

A 1836: *On Will in Nature* (*Ueber den Willen in der Natur. Eine Erörterung der Bestätigungen, welche die Philosophie des Verfassers, seit ihrem Auftreten, durch die empirischen Wissenschaften erhalten hat*. Frankfurt-am-Main: Siegmund Schmerber, 1836) as provided in Hübscher *SW* 4.

B 1854: *On Will in Nature* (*Ueber den Willen in der Natur. Eine Erörterung der Bestätigungen, welche de Philosophie des Verfassers, seit ihrem Auftreten, durch die empirischen Wissenschaften erhalten hat. Zweite verbesserte und vermehrte Auflage*. Frankfurt-am-Main: Joh. Christ. Hermann'sche Buchhandlung. F.E. Suchsland, 1854) as provided in Hübscher *SW* 4. This text provides the basis for the present translation. The endnotes show important differences in B as well as Schopenhauer's important handwritten variants. The present translation excludes minor stylistic variants and spelling changes. Wherever Schopenhauer quotes English in the original, we provide the text as he quotes it. We note those instances in which Hübscher follows Frauenstädt's inclusions of handwritten additions.

1 This preface was added in B.

2 This footnote is a handwritten addition to B.

3 This footnote is a handwritten addition to B.

4 This footnote is a handwritten addition to B.

5 This footnote is a handwritten addition to B.

6 In the phrase, ‘as is consistent and honest’, the words ‘and honest’ are handwritten additions to B. This footnote is a handwritten addition to B.

7 This footnote is a handwritten addition to B.

8 The Latin phrase ‘*coram populo*’ (‘in public’) is a handwritten addition to B.

9 This footnote is a handwritten addition to B.

10 This footnote is a handwritten addition to B.

11 This footnote is a handwritten addition to B.

12 This footnote is a handwritten addition to B.

13 This footnote is a handwritten addition to B.

14 This footnote is a handwritten addition to B.

15 This footnote is a handwritten addition to B.

16 This footnote is a handwritten addition to B.

17 In A the footnote read as follows: ‘It cannot be considered breaking the silence that in 1830 I repeated my treatise on colour (which had appeared in 1816) in Latin for the use of foreigners, and incorporated it in the 3rd volume of *Scriptores ophthalmologici minores*, edited by J. Radius. This, however, is the only thing that I have published since the end of 1818, when *The World as Will and Representation* appeared.’

18 This sentence is added in B.

19 At this point A has the following, omitted in B: ‘P. 14: “The question which chemical processes go on in the mysterious parenchyma, this workshop of the vegetative and animal will, whereby the transformation of serum into blood occurs more or less” etc.’

20 At this point A has the following, which continues quoting Brandis, and is omitted in B: ‘If vegetation results from a disturbed will, then this will is satisfied and is again subordinated to the harmony of the whole… Vegetation produces a different formation, or secretion, suppuration, serous discharge, etc., and the sick will is satisfied, the increased venosity ceases’ -- P. 21: ‘If this unsatisfied organic will disturbs the sense organs, then distorted apperception, distorted representations, desire and aversion, dizziness, delirium, etc., arise, and these can incite a disturbed conscious will as madness, mania, spasms, convulsions, etc. However, typhus can be most easily satisfied in this disturbed will by representations, desire and aversion, and through this it is understandable that a raving madness is often the distinct crisis of the illness of typhus. – Also giving another direction to the *organic will* can heal illness. We have called this a counter-stimulus. As in conscious life, so too with this counter-stimulus, it cannot be merely a question of spatial + or −. Just as in conscious life an apparently slight apperception can suppress the most violent desire, aversion, and will, so too an apparently slight challenge to the *organic will* can often suppress the most violently diseased will, e.g., the smell of asafoetida, burnt feathers, etc., hysterical convulsions’.

21 At this point A has the following, omitted in B: ‘P. 26: “If coldness is increased to the extent that it becomes detrimental to well-being, then the *organic will* awakens to produce more powerful warmth to the same extent: but vegetation diminished by cold is incapable of completely satisfying this *will*”, *etc.*’ –

22 At this point, A has the following, omitted in B: ‘P. 59: “It is different with increased venosity or the diseased *animal will* when it is brought to life in order to end or relieve another diseased state in an organism, that is, when it is a metastasis. In this case, the cause of the diseased *will* is not a single disturbance of life from outside (contagion, miasma, overstimulation or withdrawal of the usual stimuli), which can be moderated by counter-stimuli, in one case easily and in another with difficulty; rather, in this case the cause endures. It is to unconscious animal life what passion is to conscious animal life: it is the tendency of all life to yield to an unsatisfied *will* and to manifest it in other organs. Just as the passion of the animal incites all sorts of muscular activity, produces secretions, while making other organs inactive, etc., in order to satisfy an unsatisfied *will*, so, too, animal–vegetative life incites or suppresses activities so as not to manifest an unsatisfied *will*; just as conscious passions can be excited or depressed in various individuals or in individual organs, so too the same unsatisfied *will* can produce enhanced life processes in one individual and suppression of individual functions in another, as long-slumbering *conscious will* can be roused by external or internal causes (memory), so too this *animal–vegetative will* has its memory. I actually saw hydrophobia break out after violent chilling, where the unfortunate young man had been bitten by a mad dog six–seven years before; I thrice saw vomiting blood regularly return following an interval of seven years. All chronic diseases are nothing else, and the inability of many contagions to be effective a second time is due to such an unconscious memory. This is no analogy; rather, it is the fundamental idea of the *one* life that in all its manifestations strives to present and to preserve the unity of the individual"'.

23 In A, the opening of this sentence reads: 'If I had believed that Mr Brandis had been familiar with my work, then I would…'

24 At this point A has the following, omitted in B: 'Thus I am confident that he would have named me. Meanwhile, authorial honesty has so often been set aside in our day that, as Mr Brandis is not personally familiar to me, I could only go by the general rule, and from that alone the conclusion would not be safe – '.

25 This paragraph is added in B.

26 This sentence is added in B.

27 This footnote is a handwritten addition to B.

28 ‘the so-called rational’ is a handwritten addition to B.

29 ‘as a self-existing being, a thing in itself’ is a handwritten addition to B.

30 ‘This rational idea of the soul’ is a handwritten addition to B, replacing ‘it’ in A.

31 The given names ‘Georg Ernst’ are handwritten additions to B.

32 ‘where it dwelled in the garret’ is a handwritten addition to B.

33 ‘only by means of the forms of cognition…not immediately in self-consciousness.’ is added in B.

34 This sentence is added in B.

35 This sentence is added in B.

36 This sentence is added in B.

37 At this point A has the following parenthetical remark, omitted in B: ‘(as the empiricist Brandis had quite correctly recognized)’.

38 The passage from ‘expressed objectively, this means when the external influence that causes the act is mediated by the *brain*’ through to ‘and so no longer intuitive, but merely denoted and fixed through words’ is added in B.

39 This sentence is added in B.

40 ‘in the same way, after the removal of the brain, many reptiles live for weeks, even months’ is added in B.

41 This footnote is a handwritten addition to B.

42 This paragraph is added in B.

43 ‘and conversely we dilate the pupil when we look into the distance’ is added in B.

44 The final two sentences of this paragraph, referring to the works of E. H. Weber and Johannes Müller, are additions in B.

45 The phrase ‘erection from erotic ideas’ is a handwritten addition to B.

46 ‘nausea at the sight of disgusting things…’ through to ‘cats and enraged cocks…’ (i.e. the end of the sentence) is added in B.

47 ‘for it does not depend, like intellect, on perfection of the organization, but it is essentially the same in all animals and so intimately familiar to us’ is added in B.

48 At this point, the following was omitted in B: ‘On the next page there is a somewhat obscure passage, which, if understood literally, could appear to contain a contradiction, which I ascribe to the inevitably incomplete understanding of Sanskrit, from which it is translated. The passage reads [Schopenhauer quotes the English text]: “The body of an individual, with his limbs and organs of sense, is a result of a peculiar quality of his soul; since this is the cause of that individual's fruition, like a thing produced by his effort or volition. The peculiar quality of the soul, which does occasion its being invested with body, limbs and organs, is virtue or vice: for body and the rest are not the result of effort and volition.” I translate it as I believe it must be understood: “The body of an individual, with his limbs and organs of sense, is a result of a peculiar quality of his soul; since this (body [*Leib*]) is the cause of that individual's fruition, like a thing produced by his effort or volition [*Anstrengung oder Willen*]. The peculiar quality of the soul, which does occasion its being invested with body, limbs and organs, is virtue or vice: for body and the rest are not (actually) the result of effort and (intentional) act of will [(*absichtlichen*) *Willensakt*]"'.

49 These two sentences, 'The animal becomes most vividly aware…' through to '…still shows itself in humans as dance' are added in B.

50 This footnote is a handwritten addition to B.

51 This footnote is added in B.

52 This sentence is added in B.

53 The passage from the clause 'where he has cut through the nerve of the argument for this very fallacious proof as he did the two others' through the next four sentences, ending with '…not what stands opposed to it' was added in B.

54 'nor can an intelligible world precede the sensible world, since it receives its material solely from the latter. An intellect has not produced nature; rather, nature the intellect.' is a handwritten addition to B.

55 The passage from 'Therefore we first of all say that the world is not created with the aid of cognition…' through to the end of the paragraph is added in B.

56 'the termite's hill' is a handwritten addition to B.

57 This sentence, including the quote from Lucretius, is added in B.

58 Two sentences, from 'Who does not see that the form of the anteater…' through to '…the fossilized anteater would be an insoluble riddle if they did not know of the termite' are added in B.

[59] This footnote is a handwritten addition to B.

[60] This sentence, including the quotes from Aristotle and Schopenhauer's Latin translations, is added in B.

[61] ‘especially if, like the eagle and condor, they have to spot their prey from dizzying heights’ is added in B.

[62] ‘the most timid among these, the hare, has even needed a striking lengthening of the outer ear’ is added in B.

[63] ‘vigorous respiration and rapid blood circulation, represented by appropriate organs, are necessary conditions associated with great muscular strength and irritability, and nowhere is it possible to find the opposite’ is added in B.

[64] The name of the genus and species is a handwritten addition to B.

[65] This sentence is added in B.

[66] This footnote is a handwritten addition to B.

[67] The passage from the clause ‘and each is as if aimed at and calculated, even down to the smallest detail, for the annihilation of another…’ through to the parenthetical reference to Kirby and Spence, is added in B.

[68] ‘thus the *Sepia* has provided itself with the material for a dark cloud that it spreads around itself at the moment of danger’ is added in B.

[69] ‘the louse on the Negro is black; indeed it is the same with our flea’ and the attached footnote are added in B.

[70] ‘such an unprecedentedly’ is a handwritten addition to B.

71 ‘therefore, even the ancients called intellect *hêgemonikon*, i.e., the guide and leader’ is added in B.

72 ‘and more secure preservation of the individual, and indeed in areas which teem with the most ravenous, strongest, and agile predators’ is added in B.

73 In B the relative clause reads ‘which must correspond to [*entsprechen*] an understanding’; Schopenhauer's handwritten alteration to B changes the clause to ‘which must be directed by [*vorstehn*] an understanding’.

74 At this point in B stands the parenthetical remark: ‘(e.g. striking nuts with stones, shoving a stone into an open giant clam [*Riesenmuschel*], which otherwise would clap shut and pinch off the animal's hand as the animal tries to withdraw it)’. In a handwritten alteration, Schopenhauer notes that this parenthetical remark should be deleted.

75 Six sentences, from ‘The apes’ extraordinary understanding…’ through to ‘…according to Flourens and Fr. Cuvier)’ are added in B. And the footnote concerning rodents added in B.

76 ‘exceeding’ [*überwiegende*] is Schopenhauer's handwritten alteration of B. In B, the adjective was ‘greater’ [*größere*].

77 In B the sentences, ‘The case of the dodo bird…which as such could not have survived’ are expanded and relocated from A. In A the passage reads as follows: ‘A specific illustration of our principle is also provided by the case of the dodo bird, whose species, as is known, is extinct and which was extraordinarily dumb, from which its extinction is explained’. In A the sentence is located above immediately after the sentence, ‘The horse, too, has a longer lifespan…and greater speed to escape its pursuer’.

78 Four sentences, from ‘The exceeding subtlety of the fox's understanding…’ through to ‘Thus insects’ understanding is insufficient only in an unnatural environment’ are added in B. The footnote here is a handwritten addition to B.

79 ‘and humans’ relatively weak muscular power, in which they are by far behind apes of similar size’ is added in B.

80 ‘as well as humans' inability to flee, since they are far outstripped in running by all four-footed mammals’ is a handwritten addition to B.

81 ‘at the same time it lengthens the *os cossygis* to a prehensile tail an ell long in order to hang on branches with it and to swing from one bough to another’ is added in B.

82 ‘to the point of being unrecognizable’ is a handwritten change to B. In B the phrase reads ‘so diminutively’.

83 This paragraph is added in B.

84 ‘intuited in the brain as representation, and hence subordinate to the forms of space, time, and causality’ is added in B.

85 This footnote is a handwritten addition to B.

86 This footnote is a handwritten addition to B.

87 This footnote is a handwritten addition to B.

88 The passage from ‘which is at least not to be doubted among epizoa…’ through to the end of the paragraph is added in B.

89 This footnote is a handwritten addition to B.

90 From ‘A remarkable example of the power of the impulse of this spontaneity…’ through to the end of the paragraph is added in B.

91 From ‘However, in his prize essay crowned by the French Academy of Sciences…’ through to the end of the paragraph is added in B.

92 This entire paragraph is added in B.

93 This footnote is a handwritten addition to B.

94 Nineteen sentences, beginning ‘On the 6th of November 1843 *Dutrochet* presented a paper on this subject to the Academy of Sciences…’ through to ‘But although the natural striving of roots is to go downwards, if the soil below is dry and a moist substance lies above, the roots strive upwards to reach the moist substance’ are added in B.

95 This footnote is a handwritten addition to B.

96 ‘no more than dreams, which, for a while, exist in just the same way’ is added in B.

97 ‘to have brought it to consciousness is exactly Kant's immortal achievement’ is added in B.

98 The parenthetical remark ‘(which includes exactly *Locke's* primary qualities)’ is added in B.

99 This sentence is added in B.

100 In B as published in 1854, this sentence reads: ‘The more eminent the mind is, the more it loses this, the more the external world is presented purely objectively, until ultimately, in the genius, it reaches complete objectivity…' Hübscher accepts Schopenhauer's handwritten change to B, as given in the body of the present text.

101 'hyperbolic' is a handwritten addition to B.

102 This sentence is added in B.

103 The reference to the 1849 edition of Herschel's book is added in B.

104 This footnote is a handwritten addition to B. Following the Latin phrase, at the close of this handwritten footnote, Schopenhauer referred to his notebook, *Senilia*, p. 70 (*HN* 4, Pt. 2, pp. 20ff.): '"Matter can *only* be moved by *mechanical forces*" – This is the tacit assumption of the French physicists and the German physicists who imitate them, seeking to explain everything mechanically: the magnet, light, etc. – Obviously those who do not accept that there is *will* in things must, like Descartes and LeSage, explain gravity through an external thrust. For actually the alternative is settled: either the origin of any movement is located completely in an external cause, such that every movement results from an impact, or it is to be admitted that in *that which is itself moved* there is an *inner impulse*, which we call *gravity*, as a result of which it moves itself. But we cannot explain, not even think of, such an *inner impulse* in any other way than as just that which in us is *will*; only here its direction is not so uniform as with gravity, which always (on earth) falls vertically downward; but it changes in multiple ways, depending on the extent of the images that its intellect (the intellect up to which it has here increased its receptivity) holds before it; but nonetheless always with the same necessity as with gravity. That the essence of forces in inorganic nature is identical with will in us presents itself with complete certainty and as a demonstrated truth to anyone who seriously reflects on it. That it appears paradoxical merely indicates the importance of the discovery'.

105 The phrase 'As an Englishman who above all is concerned that the Mosaic account not be imperilled' is added in B, with the parenthesis remark ‘(which lies closer to his heart than any insight or truth in the world)’ a handwritten addition to B.

106 The parenthesis remark ‘(except among professors of philosophy who throw Kant's theories to the winds and consider me not worth their attention)’ is added in B.

107 The passage from the phrase ‘for before I act on things, they must have acted on me as motives’ through to the end of the following sentence ‘here I need not go into it anew’ is added in B.

108 This paragraph is added in B.

109 ‘and with death the organic ceases to be organic’ is added in B.

110 This sentence is added in B.

111 This sentence is a handwritten addition to B.

112 This sentence is a handwritten addition to B.

113 Nine sentences, beginning ‘This fundamental view is usually assumed to be self-evident…’ through to ‘Matter is external existence, has forces of motion, but puts these into effect only in accord with certain spatial relations and external oppositions; only the soul is always internally active, and only bodies with souls find the occasion for motion in themselves, independent of external mechanical relations, and move themselves of their own power’ are added in B.

114 In B the clause reads: ‘everything is comprehensible to the highest degree: insights are completely clear and satisfying and leave nothing to be desired in that it is just impossible for us to think that something could be otherwise; all this comes from our being concerned with only the forms of our own intellect’; in A the same clause reads: ‘everything is comprehensible to the highest degree concerning only the forms of our own intellect'.

115 This sentence is added in B.

116 This sentence is added in B.

117 'and so much more seems to lie in the former than in the latter!' is added in B.

118 'more and more the effect appears more observable than the cause' is added in B.

119 'and compared to cause, effect has grown so great' is added in B.

120 'and that in each gradation, the cause lags behind the effect only in material reality; whereas, in dynamic reality, in energy, it keeps pace with the effect' is added in B.

121 '– like Mephistopheles, who appears under scholarly attack out of a poodle grown colossal, whose core he was' is added in B.

122 'then one will never comprehend the inner being of nature, to which there is absolutely no other path; rather' is added in B.

123 Four sentences, beginning 'In a more general sense, *Pliny* says…' through to 'thus he quite correctly puts "against nature" as a paraphrase of "against their will"' are added in B.

124 This and the previous paragraph are added in B. The footnote at the end of this paragraph is a handwritten addition to B.

125 The phrase ‘and I take it to be superfluous to cite the numerous magnetists’ statements that confirm it’ and the accompanying footnote are handwritten additions to B.

126 This footnote is a handwritten addition to B.

127 The reference to and quote from De Lausanne (from ‘*De Lausanne*, a French magnetist, expresses himself…’ to ‘“…it must employ a method of action”’ is added in B.

128 At this point Schopenhauer added in the margin of his text of B a reference to a passage in his notebook ‘Spicilegia’ (*HN* 4, Pt. 1, p. 294): ‘In the *magnetist*, will assumes a certain character of omnipotence, and in the *somnambulist*, the intellect assumes that of omniscience. In this both become one individual to a certain extent: his will dominates her, and her intellect shares in his thoughts and sense impressions.’

129 This footnote is a handwritten addition to B.

130 The three final sentences of the previous paragraph (beginning ‘Today merely taking and holding the patient's hand while looking at the patient fixedly…’) through to this paragraph (ending ‘and two other men from the audience “acted as jurors”’) are added in B.

131 This sentence is added in B.

132 This footnote is a handwritten addition to B.

133 This sentence is added in B.

134 ‘and do not want to let it be said by their great countryman that “there are more things in heaven and earth than are dreamt of in your philosophy”’ is added in B.

135 At the page beginning here, Schopenhauer wrote a marginal notation in his copy of B: ‘Spicilegia’ 325, 330. On p. 325: “The English newspapers (around the end of August 1845) report with great sarcasm, as an unheard of superstition, that a young man who suffered for along time from a recurrent cold fever (*ague & fever*) and was treated by doctors unsuccessfuly, used the following *sympathetic cure* on the advice of a wise woman and recovered: – a spider trapped in an empty nutshell which was bound up and worn around the neck: as the spider wastes away, dies, and decomposes, the fever disappears. Occurs in Most, *Sympathy*. [Perhaps: G. F. Most *Die sympathetischen Mittel und Curmethoden*.]” – On p. 330: “Dr Neef told me of his having witnessed the following *sympathetic cure* successfully carried out. It concerns an exostosis on the hand: the exostosis was rubbed with an egg until the spot seemed somewhat moist, and then this egg was buried in a red anthill (reddish ants about a half inch long). On that very night the patient felt an intolerable itching, as from ants on the spot, and from then on the exostosis diminished until after some time it went away completely and never returned. Cf. Kieser's *Archives*, Vol. 5, Pt. 3, p. 106; Vol. 8, Pt. 3, pp. 145–8, and vol. 9”’.

136 This footnote is a handwritten addition to B.

137 Two sentences, from ‘Those unfamiliar with such cases may find examples…’ through to ‘…is useful for a preliminary familiarity with the subject’ are added in B. The footnote is a handwritten addition to B.

138 Five sentences, from ‘In *Most's* book, cited above…’ through to ‘…and cannot be convinced otherwise’ are added in B.

139 Two lengthy sentences, from ‘A passage from Kant's *Groundwork of the Metaphysics of Morals* may verify…’ through to ‘…but it could not be an arbitrarily created whim’ are added in B.

140 ‘and just as there is a suspension of the isolation of the individual's *cognition* in somnambulistic clairvoyance, there could also be a suspension of the isolation of the individual's *will*’ is added in B.

141 This sentence is added in B.

142 In A, the passage ‘I knew a squire…which he then attributed to the peasants' firm confidence’ is in the present tense.

143 This sentence, citing Campanella, is added in B.

144 This footnote is a handwritten addition to B.

145 This footnote is a handwritten addition to B.

146 Five sentences, from ‘Thus far *Horst's* paraphrase’ through to ‘“… when these two wheels fit one another and become one, so to speak, they are”, etc.’ are added in B.

147 The passage from ‘whereby it can uproot and plant, kill and bring to life, bind and loose, heal and injure’ through to the end of the paragraph, ‘from which the burning oil of the holy ghost flares up in the *magic* that casts its sparks’ replaces in A: ‘as a result of which it can bind and loose, heal and injure. But this magical power of faith through our unification with the divine will is nothing other than what is achieved by completely setting aside all dependence on the visible world, and what amounts to complete retirement to the innermost ground of the soul’.

148 This paragraph is added in B.

149 This footnote is a handwritten addition to B.

150 This sentence is added in B.

151 This footnote is a handwritten addition to B.

152 This footnote is added in B.

153 This final paragraph is added in B, and the footnote is a handwritten addition to B.

154 This footnote is a handwritten addition to B.

155 Seven sentences, from ‘We know that there is first of all a national worship of nature…’ through to ‘This worship of heroes is connected to private worship, which every respectable family offers to its forebears at the grave site’ are added in B.

156 This note replaces the following in A: ‘For a general acquaintance with his life and teaching, I especially recommend a fine biography of the Buddha, the gospel of the Buddhists, so to say, by Deshauterayes, in French, in 7 volumes of the *Journal Asiatique*, Paris, 1825. – Likewise, much that is worth reading about Buddhism is to be found in the *Mélanges Asiatiques* by Abel-Rémusat, Vol. I, 1825. – as also in J. J. Schmidt's *Geschichte der Ost-Mongolen*, 1829. – And now, since the Asiatic Society of Paris has finally obtained possession of the Gandshur or Kaghiour, we may look forward with joyful confidence to a presentation of Buddhism from its canonical books themselves.’ The parenthetical remark under entry 5 in this list of recommended works as given in the text (‘very instructive… breathe its genuine spirit’) is a handwritten addition to B. Entry 17 is a handwritten addition to B; hence, beginning with 17, Hübscher renumbers the entries from B. Entries 25 and 26 were also handwritten additions to B.

157 At the head of this page, Schopenhauer wrote the following handwritten addition without further instruction for its exact placement: ‘Apparently the collapse of Christianity is drawing near. In days to come Indian wisdom will undoubtedly spread over Europe. For the part of humanity that takes the lead over all the rest cannot remain big children in the most important matter, considering that the metaphysical need is inescapable, but philosophy is always just for the few. However, such an introduction of the teachings of the Upanishad or even of Buddhism, would not begin, as those of Christianity once did, among the lower classes of society, but among the higher classes, so that these teachings will immediately appear in purified form and as much as possible free of all mythical trappings’.

158 In B the word is ‘followers’ [*Bekenner*]; Schopenhauer's handwritten alteration changes the word to ‘faithful’ [*Gläubige*].

159 In B the passage from ‘Besides this general nature and hero worship, and for more dogmatic purposes, there are three religious doctrines in China.…’ through to ‘thus by far more than any other religion’, replaces the following in A: ‘and we know that there are to be found in China three religious doctrines: the most ancient doctrine of reason or world order as the principle of all things, the great one, or the lofty peak, was prepared by the philosophers long before Confucius; it now appears very much to have receded into the background and its teachers to have been scorned. Secondly we find the wisdom of Confucius, of which scholars and statesmen are especially fond and which appears similar to a broad, somewhat commonplace moral philosophy, without the support of metaphysics. Finally there is, for the great masses of the nation, the sublime and loving doctrine of Buddha, whose name in China is pronounced *Fo*, while in Tartary he is called Shakia-Muni, also Burkhan-Bakshi, but in India, freqently Gotama. His teaching prevails in the greatest part of Asia, and according to Upham, the most recent researcher, it numbers 300 million faithful, thus among all religious doctrines on this planet probably the greatest number’.

160 This sentence is added in B. B has the word ‘unconditional’ [*unbedingt*], which Schopenhauer's handwritten alteration changes to ‘unfailing’ [*unweigerlich*].

161 The clause ‘and who accordingly speak of “acosmism” – the clowns!’ and the final sentence of the paragraph are added in B.

162 The adverbial clause ‘as the Greeks and Romans did earlier in analogous circumstances’ is added in B.

163 ‘which is the same as if the Chinese were made to believe that all the princes of the world paid tribute to their emperor’ is a handwritten addition to B.

164 In this footnote, the citation to Köppen is a handwritten addition to B.

165 The clause ‘all of which amount to the fact that monotheism – obviously a decidedly Jewish doctrine – is foreign to the Buddhists and to the Chinese in general’ is added in B.

166 Three sentences, from ‘In his *Description of the Burmese Empire*…’ through to ‘…and not the slightest trace of it can be found in Buddhist texts’ are added in B.

167 At this point A has the following, omitted in B: ‘P. 2: “Buddhism is charged with completely excluding a creator and ruler of the world from its system; meanwhile, if it can be positively proven that this is the true sense of its teaching, it still admits the efficacy of fate (*Schicksal*, *Damata*), whereby much of the necessary procedure of maintenance and governance is brought into the system”’.

168 This footnote is a handwritten addition to B.

169 Two sentences, ‘I note about *Tschu-fu-tze*…’ and ‘His work is the basis of present Chinese instruction…’ are added in B.

170 This footnote is a handwritten addition to B.

171 Seven sentences, from ‘But the independence of my fundamental thought from this Chinese authority is established by the reasons given…’ through to the end of the chapter, replace in A: ‘But not only is my priority (in Europe) certain regarding the noteworthy passage cited above, but I have also sought in vain among all the writings about China available to me for a corroboration and further explanation of the Chinese dogma in question here; finally for this reason I have questioned a famous sinologist about this, who, however, could provide no further explanation; but one would hope it would be believed that I am not familiar with the Chinese language, so I am not in a position to derive thoughts from original Chinese works unknown to others for my own use; considering that the opposite is most rare and where it occurs, does not go unnoticed. Our knowledge of China is still so deficient and fragmentary, and the number of sinologists is so small, that if in the meanwhile some fortunate chance does not occur, it will still take many years before we become familiar with more about the dogma mentioned above, which has been communicated with such lamentable brevity'.

172 'and then presented it more briefly in his last pamphlet, *The Science of Knowledge in General Outline*, 1810' is added in B.

173 'and mostly he denies it directly with shocking audacity (e.g. *Ethics* IV, proposition 37, scholium 2)' is added in B.

174 'which once again confirms the old "whoever expresses the truth, expresses it simply"' is added in B.

175 'Since I *will* as I *am*, thus I must *be* as I *will*' is added in B.

176 The passage from the clause 'and Spinoza says correctly, "that thing is called free, which exists solely by the necessity of its own nature, and of which the action is determined by itself alone"…' through to "'…punish yourself"', including the footnote reference to *Parerga,* is added in B.

177 Three sentences, from 'The latter point is a part of my philosophy…' through to '…gives evidence of the embarrassment to which the opposite assumption leads' are added in B.

178 This sentence is added in B.

179 ‘and *Vauvenargues* is quite correct in saying “clarity is the good faith of philosophers”’ is added in B.

180 This sentence is added in B.

181 The last two sentences of the chapter are added in B.

182 ‘and even that of the “philosophical trade”’ is added in B.

183 In the footnote on Jean-Paul ‘The preceding refers to 1835, the time of the first edition of this essay’ is added in B.

184 Two sentences, ‘Thus they may take it as far as they want…’ through ‘…where the sciences are placed under the guardianship of the state’ are added in B.

Glossary of names

Abélard, Peter (1079–1142), French philosopher and early scholastic theologian
Agrippa von Nettesheim (Heinrich Cornelius) (1486–1535), author, jurist, philosopher, physician and alchemist in Cologne
d’Alton, Edward Joseph (1772–1840), archaeologist and anatomist, professor in Bonn, colleague of Pander
Ampère, André-Marie (1775–1836), French mathematician and scientist, important for work on electricity and magnetism
Anquetil-Duperron, Abraham Hyacinthe (1731–1805), orientalist, translator and editor of *Oupnek'hat*, a translation of the *Upanishads* into Latin (from Persian), a book which Schopenhauer acquired in 1813, and later referred to as the ‘consolation of his life’
Anselm, St (1033–1109), Archbishop of Canterbury; scholastic, developer of the ontological proof
Apuleius, Lucius (second century CE), Roman writer, author of *De magia*
Arago, Dominique François Jean (1786–1893), French physicist and astronomer; professor at Polytechnical High School in Paris
Archimedes (287–212 BCE), mathematician and physicist from Syracuse, Sicily
Ariosto, Ludovico (1474–1533), Italian poet
Aristophanes (450–387 BCE), Greek comic playwright
Aristotle (384–322 BCE), the great and immensely influential Greek philosopher
Augustine, Saint (353–430), Church Father, Bishop of Hippo
Avicenna (Ibn Sina) (980–1037), Arabian physician and philosopher
Babinet, Jacques (1794–1872), French physicist
Bacon, Sir Francis (1561–1626), English philosopher, scientist, and statesman
Bacon, Roger (1219–94), English theologian and naturalist

Barthélemy de Saint-Hilaire, Jules (1805–95), French scholar and statesman

Baumgarten, Alexander Gottlieb (1714–62), student of Christian Wolff, Professor of Philosophy in Frankfurt an der Oder

Bayle, Pierre (1647–1706), French writer of the Enlightenment, author of *Dictionnaire Historique et Critique* (*Historical and Critical Dictionary*)

Becquerel, Alexandre Edmond (1820–91), French physicist, professor of physics, known for his investigations of electric light

Bekker, Balthasar (1634–98), Reform church theologian

Berkeley, George (1685–1753), Bishop, Irish philosopher and proponent of idealism

Bessel, Friedrich Wilhelm (1784–1846), founder of applied astronomy

Bindsfeld[t], Peter (c. 1540–1598/1603), author of *Tractatus de confessionibus maleficorum et sagarum* (1591)

Biot, Jean-Baptiste (1774–1862), French mathematician and physicist

Birnbaum, Heinrich (1803–79), son of a Braunschweig merchant who went on to become a well-known educator in the natural sciences and mathematics; author of articles and books on the natural sciences and geometry, intended to inform a broad, educated audience

Black, Joseph (1728–99), Scottish chemist and physician, best known for discoveries of carbon dioxide, latent heat, and specific heat; professor of medicine and chemistry at the University of Glasgow

Blumenbach, Johann Friedrich (1752–1840), natural scientist, physiologist, and anatomist; professor of medicine at Göttingen, one of Schopenhauer's favourite professors, with whom he took four courses

Bochinger, Jean Jacques (1802–31), theologist, pastor in Strasbourg, author of *Sur la connexion de la vie contemplative, ascétique et monastique, chez les Indous et chez les peuples Bouddhistes* (1831)

Bodin, Jean (1530–96), French publicist, author of *De Magorum daemonomania s. detestando lamiarum ac magoruum cum Satana commercio* (1581)

Böhme, Jakob (1575–1624), Lutheran mystic born in Silesia

Bopp, Franz (1791–1867), professor of Asiatic studies in Berlin; philologist; published pioneering work in comparative linguistics examining relationships among grammars of European and Asian languages

Boyle, Robert (1627–91), English physicist and philosopher, president of the Royal Society of London; formulated Boyle's law concerning pressure and volume of gases

Brandis, Joachim Dietrich (1762–1846), physician in Braunschweig, Professor in Kiel, physician in ordinary at the royal court in Copenhagen

Brewster, Sir David (1781–1868), English physicist and biographer of Newton, author of *Briefe über natürliche Magie* (1831)

Brewster Jr, David Edward (b. 1815), son of Sir David Brewster

Broussonet, Pierre-Marie-Auguste (1761–1807), French botanist

Brown, Thomas (1778–1820), Scottish Enlightenment physician, credited as a founder of association psychology, author of *Lectures on the Philosophy of the Human Mind* (1820)

Brücke, Ernst Wilhelm, Ritter von (1819–92), German physiologist

Bruno, Giordano (1548–1600), Italian philosopher of nature, burned to death as a heretic

Buchanan-Hamilton, Francis (1762–1829), Scottish physicist, author of ‘On the Religion of the Burmas’

Buddha (Siddârtha Gautama) (sixth–fifth century BCE), historical founder of the Buddhist religion

Buffon, Georges-Louis Leclerc, Count (1707–88), French natural scientist

Burdach, Karl Friedrich (1776–1847), physiologist and professor of anatomy and physiology in Königsberg

Bürger, Gottfried August (1747–94), a.k.a. Jocosus Hilarius, German jurist and poet; said to have created the German ballad

Buridan, John (c.1300–after 1358), French scholastic philosopher

Burnouf, Eugène (1801–52), Eastern and Sanskrit scholar, author of *Introduction à l'histoire du Buddhisme Indien* (1844)

Cabanis, Pierre Jean Georges (1757–1808), French physician and philosopher, noted sensualist and materialist

Caesalpinus (Andrea Cesalpina) (1519–1603), Italian Renaissance philosopher, botanist, and physiologist, professor of botany in Pisa, and 1591 professor of medicine in Rome

Campanella, Tommaso (1568–1639), Italian Dominican, philosopher and poet

Caroré, Friedrich Wilhelm (1789–1852), German jurist, publicist and philosopher

Cavendish, Henry (1731–1810), English private scholar

Cels, Jacques-Martin (1743–1806), French botanist

Chamfort, Nicolas (1741–94), French aphorist

Cheselden, William (1688–1742), British surgeon

Chladni, Ernst Friedrich Florenz (1756–1827), physicist and author of *Akustik and Kurze Uebersicht der Schall- und Klanglehre* (1827)

Cicero, Marcus Tullius (106–43 BCE), pre-eminent Roman statesman and orator, who composed the first substantial body of philosophical work in Latin

Clarke, Samuel (1675–1729), English theologian and follower of Newton, best known for his correspondence with Leibniz

Cleanthes (331– 232 BCE), Greek Stoic philosopher, student and successor to Zeno of Citium

Colebrooke, Henry Thomas (1765–1837), English Indologist, translator of the *Upanishads*

Condillac, Étienne Bonnot de (1715–80), French philosopher of the Enlightenment period and popularizer of Locke's ideas in France

Confucius (551–479 BCE), Chinese sage, teacher, and socio-political theorist

Copernicus, Nicolaus (1473–1543), Polish astronomer whose theories revolutionized the study of the solar system

Csoma Kőrösi, Sándor (Alexander) (1784–1842), Hungarian scholar, founder of Tuberology

Cuvier, Georges-Léopold-Chrétien-Frédéric-Dagobert, Baron (1769–1832), French naturalist and zoologist

Dante Alighieri (1265–1321), Italian poet, author of the great trilogy *La Divina Commedia* (*The Divine Comedy*)

Darwin, Erasmus (1731–1802), British physiologist and poet, grandfather of Charles Darwin; author of *Zoonomia: On the Laws of Organic Life* (1786/1796)

Darwin, Robert Waring (1766–1848), physician, son of Erasmus Darwin, author of *New Experiments on the Ocular Spectra of Light and Colours* (1786)

Daubeny, Charles Giles Bridle (1795–1867), botanist, professor at Oxford

Davis, Sir John Francis (1795–1890), English diplomat, sinologist, known for his English translations of Chinese literature

Davy, Sir Humphrey (1778–1829), English chemist

Decandolle, Augustin Pyrame (1778–1841), Swiss botanist

De Lavisanne, A., *see* Sarrazin de Montferrier

Delrio, Martin Anthony (Martinus) (1551–1608), Dutch theologian, author of *Disquisitiones magicarum libri sex quibus continetur accurata curiosarum artium & vanarum superstitionum confutatio* (1599/1600)

Demiani, Carl Friedrich (1768–1823), German painter and Supervisor of Dresden Gallery

Democritus (460–370 BCE), Pre-socratic atomist philosopher

Descartes, René (1596–1650), French philosopher, often referred to as the father of modern philosophy, his rationalism and mind–body dualism being especially influential

Desfontaines, René Louiche (1750–1833), French botanist

Deshauterayes, Michel-Ange André (1724–95), Eastern scholar, author of a biography of Buddha

Diderot, Denis (1713–84), French philosopher, critic, mathematician and poet of the Enlightenment

Diogenes Laertius (c. 300–350 CE), Athenian historian of ancient philosophy, whose work *The Lives and Opinions of Eminent Philosophers* is a rich source of knowledge about earlier thinkers

Don Juan, legendary Spanish seducer of women, the central character of Mozart's opera *Don Giovanni* and various literary works including Byron's *Don Juan*

Dorguth, Friedrich Andreas Ludwig (1776–1854), judge in the court of appeals in Magdeburg, one of Schopenhauer's first adherents, author of a number of philosophical tracts, one whom Schopenhauer considered a ‘troglodyte of philosophy’, but whose works Schopenhauer read because of Dorguth's allegiance to him

Dove, Heinrich Wilhelm (1803–79), Prussian meteorologist and physicist

Doß, Adam Ludwig von (1820–73), one of Schopenhauer's early followers, lawyer in Munich to whom Schopenhauer referred as his ‘John the Apostle’

Duhamel du Monceau, Henri Louis (1700–82), arborist

Dupotet, Baron (Jules Denis du Potet de Sennevoy) (1796–1881), french exponent of animal magnetism

Dutrochet, René Joachim Henri (1766–1847), French physiologist; author of *Sur les mouvements révolutifs spontanés chez les végétaux* (1843)

Eastlake, Charles Lock (1793–1865), painter, gallery supervisor, and author, translator of Goethe's *On the Theory of Colours*

Eberhard, Johann August (1739–1809), Professor at Halle who fought with Kant on the basis of Leibniz's philosophy

Ecclesiastes, book of the Old Testament traditionally attributed to Solomon

Enke, Johann Franz (1791–1856), astronomer, discoverer of the Enke comet

Epicharmus (550–460 BCE), Greek writer; co-founder and well-known representative of Sicilian Doric comedies

Epicurus (341–270 BCE), Greek philosopher, founder of the important school of Epicureanism

Erdmann, Johann Eduard (1805–92), German philosopher, historian of philosophy, editor of Leibniz's works

Erxleben, Johann Christian Polycarp (1744–77), professor of physics and veterinary medicine at Göttingen; author of *Anfangsgründe der Naturlehre* and *Systema regni animalis* (1777); in 1771 founded the oldest academic veterinary school in Germany, the Institute of Veterinary Medicine

Euclid (c. 300 BCE), Greek philosopher to whom geometry is attributed

Euler, Leonhard (1707–83), mathematician, physicist, and professor at Berlin and Petersburg

Faraday, Michael (1791–1867), English physicist and chemist

Fausböll, Michael Viggo (1821–1908), Danish indologist, editor and translator of the *Dhammapadam* (1855)

Feder, Johann Georg Heinrich (1740–1821), professor at Göttingen, critic of Kant

Feuerbach, Ludwig Andreas (1804–72), German philosopher, member of the movement of Young Hegelians

Feuerbach, Paul Johann Anselm von (1775–1833), lawyer, one of the founders of modern German criminal law

Fichte, Immanuel Hermann (1797–1879), professor of philosophy at Bonn and Tübingen, son of Johann Gottlieb Fichte; Schopenhauer refers to Immanuel Fichte as ‘Simplicissimus’

Fichte, Johann Gottlieb (1762–1814), German philosopher, one of the chief figures in German Idealism in the period immediately after Kant, author of the *Wissenschaftslehre* (*Science of Knowledge*) and *System der Sittenlehre* (*System of Moral Philosophy*); Schopenhauer attended Fichte's lectures in 1811–13, but is consistently merciless in decrying him as an inferior and pompous thinker

Flourens, Marie Jean Pierre (1794–1867), French physiologist, author of *De la vie et de l'intelligence* (1858)

Foucaux, Philippe-Edouard (1811–94), translator of the *Lalitavistara*

Franklin, Benjamin (1706–90), American author, scientist, and statesman; notorious philanderer, drinker, and author of moral platitudes, given to flying kites in thunderstorms

Franz, J. Ch. August (1787–1865), Schopenhauer owned and annotated in disapproving terms this obscure author's book, *The eye: a treatise on the art of preserving this organ in healthy condition, and of improving the sight; to which is prefixed a view of the anatomy and physiology of the eye with observations on its expression as indicative of the character and emotions of the mind* (1839)

Frauenstädt, Julius (1813–79), Schopenhauer's associate and editor of the first complete edition of his works in 1873

Fries, Jakob Friedrich (1773–1843), Professor of Philosophy at Heidelberg and Jena, then a professor of physics and mathematics at Jena; author of *System der Logic, ein Handbuch für Lehrer und zum Selbstgebrauch* (1807, 1819)

Froriep, Ludwig Friedrich von (1779–1847), chief medical counsel; author and editor of *Notizen aus dem Gebiete der Natur- und Heilkunde* (1821–36) and *Neue Notizen aus dem Gebiete der Natur- und Heilkunde* (1838)

Galen[us], Claudius (c. 129–200 CE), Roman physician

Gellius, Aulus (c. 130 CE), Roman grammarian

Goethe, Johann Wolfgang von (1749–1832), poet, dramatist and scholar in many fields, Germany's greatest writer and prominent Enlightenment figure. Schopenhauer knew Goethe in the period 1813–14 and collaborated with him over his theory of colours

Gracián, Balthasar (1601–58), Spanish philosophical writer, author of *El criticón* (1651–7); Schopenhauer's posthumous translation of *Oráculo manual y arte de prudencia* (1647) was edited by Frauenstädt and published as *Gracians Handorakel und Kunst der Weltklugheit* (1862)

Gromier, Émile (1811–78), *magnétiseur*, author of *Qu'est-ce que le magnétisme*? (1850)

Grotthuß (Grothus), Theodor von (1785–1822), author of *Ueber die zufälligen Farben des Schattens und über Newtons Farbentheorie* (1811)

Gützlaff, Carl (1805–51), missionary, sinologist, author of *Geschichte des Chinesischen Reiches* (1836)

Hales, Stephen (1677–1761), English plant physiologist and chemist, elected a fellow of the Royal Society in 1718

Hallé, Jean-Noël (1754–1822), professor of medicine, physics and public hygiene

Haller, Albrecht von (1708–77), anatomist, physiologist, botanist, physician and poet, considered by some to be the founder of modern experimental biology

Hardy, Robert Spence (1803–68), author of *Manual of Buddhism* (1853) and *Eastern Monachism* (1850)

Haslam, John (1764–1844), alienist (psychiatrist); author of *Observations on Madness and Melancholy, including practical remarks on those diseases; together with cases and an account of the morbid appearances on dissection* (1809)

Hauser, Caspar (1812–33), a foundling of controversial origin, who claimed to have spent his life in solitary confinement; one with whose fate Schopenhauer identified

Hegel, Georg Wilhelm Friedrich (1770–1831), German philosopher, leading figure in the movement of German Idealism, author of *Phänomenologie des Geistes* (*Phenomenology of Spirit*) and *Enzyklopädie der Philosophischen Wissenschaften* (*Encyclopedia of Philosophical Sciences*), Professor of Philosophy in Berlin and dominant intellectual figure in the first four decades of the nineteenth century; consistently criticized and satirized by Schopenhauer as a charlatan

Helmholtz, Hermann Ludwig Ferdinand von (1821–94), physicist and physiologist

Helmont, Johann Baptiste van (1577–1644), Dutch physician and natural scientist

Helvétius, Claude Adrien (1715–71), philosopher of the French Enlightenment

Herbart, Johann Friedrich (1776–1841), professor of philosophy in Göttingen and elsewhere, nemesis of Schopenhauer who reviewed the first edition of *The World as Will and Representation*, irritating Schopenhauer by claiming that his philosophy was a development of those of Fichte and Schelling

Herder, Johann Gottfried von (1744–1803), humanist, poet, translator, and philosopher; among other works, author of *Ideen zur Philosophie der Geschichte der Menschheit* (*Ideas Toward a Philosophy of History of Humanity*), *Metakritik zur Kritik der reinen Vernunft* (*Metacritique of the Critique of Pure Reason*)

Herschel, Sir John Frederic William (1792–1871), British physicist and astronomer; author of *Treatise on Astronomy* (1833), *Outlines of Astronomy* (1849)

Hesiod (eighth century BCE), one of the oldest known Greek poets

Himly, Karl Gustav (1772–1837), physician in Braunschweig, professor of Medicine at Jena and later at Göttingen, noted oculist; author of *Einiges über die Polarität der Farben* (1803)

Hobbes, Thomas (1588–1679), English philosopher

Hoffbauer, Johann Christoph (1766–1827), Professor of Philosophy at Halle, author of *Analytik der Urtheile und Schlüsse* (1792), the Kantian logic to which Schopenhauer refers in *On the Fourfold Root*

Home, Sir Everard (1756–1832), English anatomist, professor of anatomy and surgery in London

Homer (fl. c. 700 BCE), the early ancient Greek poet, author of the epic poems the *Iliad* and the *Odyssey*

Horace (Quintus Horatius Flaccus) (65–8 BCE), Roman poet, frequently quoted by Schopenhauer

Horst, Georg Conrad (1767–1838), spiritual privy counsellor, author of *Deuteroskopie* (1830), editor of *Zauberbibliothek* (1820–1826)

Hueck, Alexander Friedrich (1802–42), professor of medicine at Dorpat

Humboldt, Alexander von (1769–1859), natural scientist and explorer

Hume, David (1711–76), Scottish philosopher, essayist, and historian, often considered the greatest philosopher to write in English

Iamblichus (c. 242–327 CE), Greek philosopher, who unified Neoplatonism with polytheistic folk religions

Illgen, Christian Friedrich (1786–1844), professor of theology in Leipzig, editor of the *Zeitschrift für historische Theologie*

Irenaeus, St (c. 140–200 CE), Bishop of Lyon whose most important work is *Detection and Overthrow of the Falsely-Named 'Knowledge'*, generally known as *Against Heresies*

Jacobi, Friedrich Heinrich (1743–1819), German critic of Enlightenment and idealism, polemicist who instigated the quarrels over Lessing's alleged pantheism and Fichte's alleged atheism

Jakob, Ludwig Heinrich von (1759–1827), author of *Grundriß der allgemeinen Logik* (1788)

Jameson, Robert (1774–1854), Scottish naturalist and mineralogist

Jamin, Jules Célestin (1818–86), French physicist, professor of physics at *École Polytechnique*, received the Rumford Medal in 1858 for his work on light

Jean-Paul, pen name for Johann Paul Friedrich Richter (1763–1825), novelist and humorist

Jesus Sirach (Joshua ben Sira, also Ecclesiasticus), author of a book of the Old Testament (c. 180–175 BCE), generally in Roman Catholic and Orthodox versions, but not in the Hebrew Bible

John of Salisbury (c. 1115–c. 1180), student of Peter Abélard and Gilbert of Poitiers, aide to Thomas à Becket, scholastic philosopher and later Bishop of Chartres

Julien, Stanislas Aignan (1799–1873), sinologist, translator of the *Tao te King. Le livre de la voie et de la vertu* (1842)

Kant, Immanuel (1724–1804), German philosopher, commonly considered the greatest philosopher of modern times, a view Schopenhauer shares; author of *Critique of Pure Reason* (1781 and 1787), *Groundwork to the Metaphysics of Morals* (1785), *Critique of Practical Reason* (1788), and *Critique of the Power of Judgement* (1790). Schopenhauer saw his philosophy as Kant's carried to its end. Schopenhauer especially admired Kant's distinction between appearances and things in themselves, his distinction between the intelligible and empirical character, and his idealist account of space and time. Schopenhauer is more critical of Kant's ethics and aesthetics than of Kant's theoretical philosophy

Kepler, Johannes (1571–1630), astronomer and mathematician who sought to explain the heliocentric solar system geometrically, author of *Epitome Astronomiae Copernicanae*, a highly influential introduction to heliocentric astronomy

Kieser, Dietrich Georg (1779–1862), physician and botanist, professor of medicine; author of *System des Tellurismus oder thierischen Magnetismus* (1826), editor of *Archiv für thierischen Magnetismus*

Kiesewetter, Johann Gottfried Carl Christian (1766–1819), Professor of Logic in Berlin, author of *Grundriß einer reinen allgemeinen Logik nach Kantischen Grundsätzen, zum Gebrauch für Vorlesungen, begleitet von einer weitern Auseinandersetzung für diejenigen die keine Vorlesungen darüber hören können* (1802/1806)

Kirby, William (1759–1850), minister and natural scientist, wrote with William Spence, *Introduction to Entomology* (1815–26)

Klaproth, Heinrich Julius (1783–1835), Eastern scholar and explorer, author of *Fragments Bouddhiques* (1831), translator of *Description du Tibet* (1831), from the Russian text translated by Bitchourin

Kleinhanns, Joseph Bartholomäus (1774–1853), Tyrolean sculptor, blind from age four, known primarily for his crucifixes

Knight, Thomas Andrew (1759–1838), British botanist

Koheleth (Qohelet), main speaker in the book of Ecclesiastes

Köppen, Karl Friedrich (1775–1858), Lutheran minister in Bremen, professor of philosophy, author of *Die Religion des Buddha* (1859) and *Die Lamaische Hierarchie* (1859)

Krusenstern, Adam Iwan von (1770–1846), Russian admiral and explorer who, with A. Krasnow, led the first Russian expedition to sail around the world, author of *Reise um die Welt* (1810–14)

Lamarck, Jean-Baptiste Pierre Antoine Monet de (1744–1829), Professor of Zoology at the Jardin des Plantes, founder of Lamarckianism, the theory that adaptive changes to environment can be inherited, author of *Philosophie zoologique* (1809) and *Histoire naturelle des animaux sans vertèbres* (1815–22)

Lambert, Johann Heinrich (1728–77), colour theorist, mathematician, physicist, astronomer in Berlin, author of *Beschreibung einer mit dem*

Calauschen Wachse ausgemalten Farbenpyramide (1772)

Laplace, Pierre-Simon (1749–1827), French mathematician and astronomer

Lao-Tzu, founding figure of Taoism, to whom the *Tao Te Ching* is attributed; probably legendary, traditionally viewed as a contemporary and teacher of Confucius

Latreille, Pierre André (1762–1833), French zoologist

Lauk, Eva (b. 1824), discussed by Alexander Hueck, this Estonian girl was born quadriplegic, but was able to achieve complete perception of the external world through vision; Schopenhauer used her as an example to support his claim that time, space, and causality are *a priori*

Lavoisier, Antoine (1743–94), French chemist, often referred to as the founder of modern chemistry, pioneer in stoichiometry

Leade, Jane (1623–1704), mystical Theosophist, founder of the ‘Philadelphia Society’, a circle of Theosophists, author of *Revelation of Revelations* (1683)

Leibniz, Gottfried Wilhelm (1646–1716), German-born philosopher and mathematician, a leading figure in seventeenth-century intellectual life, best known for his *Monadology* (1714) and *Essays on Theodicy* (1710)

Leidenfrost, Johann Gottlob (1715–94), widely published German physician, described the Leidenfrost Effect, whereby a liquid in near contact with a mass significantly hotter than the liquid's boiling point produces a vapour layer that retards the liquid's evaporation

Leonardo da Vinci (1452–1519), Florentine painter, architect, natural scientist, and mathematician

Leroy, Charles-Georges (1723–89), French natural scientist, one of the precursors to the science of ethology, the scientific study of animal behaviour, author of *Lettres philosophiques sur l'intelligence (et la perfectibilité) des animaux* (1802)

Lesage (Le Sage), Georges-Louis (1724–1803), Swiss physicist, theorist of gravitation

Lichtenberg, Georg Christoph (1742–99), German satirical writer, professor of physics at the University of Göttingen, editor of *Opera inedita Tobiae Mayeri, cura Lichtenberg, De affinitate colorum* (1775)

Liebig, Justus (1803–73), chemist, author of *Die Chemie in ihrer Anwendung auf Agricultur und Physiologie* (1843)

Lindner, Ernst Otho Timotheus (1820–67), German musicologist and journalist; friend of Schopenhauer

Linnaeus, Carolus (Carl von Linné, 1707–78), Swedish botanist and originator of taxonomic classification and nomenclature

Locke, John (1632–1704), English philosopher, important empiricist, author of *An Essay concerning Human Understanding*; Schopenhauer saw his own philosophy as stemming from Locke's mediated by Kant

Lucretius, Carus Titus (c. 98–55 BCE), Roman poet

Luther, Martin (1483–1546), German Protestant theologian, founder of the Lutheran denomination, author of *De libertate Christiana* and *De servo arbitrio*

Maaß, Johann Gebhard Ehrenreich (1766–1823), Professor of Philosophy at Halle, author of *Grundriß der Logik zum Gebrauche bei Vorlesungen* (1793)

Machiavelli, Niccolò (1469–1527), Florentine statesman and historian, author of *The Prince*

MacLaurin, Colin (1698–1746), mathematician; Professor at Aberdeen and Edinburgh, author of *Account of Sir Isaac Newton's philosophical Discoveries in four books* (1850)

Magendie, François (1783–1855), French physiologist, professor of medicine at the College of France, author of *Précis élémentaire de Physiologie* (1816)

Maimon, Salomon (1753–1800), a critic of Kant's critical philosophy, author of *Versuch einer neuen Logik oder Theorie des Denkens* (1794)

Maine de Biran, François Pierre Gauthier (1766–1824), French philosopher, author of *Nouvelles considérations sur les rapports du physique et du moral de l'homme*

Malebranche, Nicolas de (1638–1715), French philosopher, who further developed in a theological–mythical sense Descartes' doctrine of innate ideas, author of *De la recherche de la vérité* (1674–5) and *Entretiens sur la métaphysique et sur la religion* (1688)

Masson, Antoine (1806–60), French physicist

Mayow, John (1641–79), English chemist, physician, and physiologist

Meckel, Johann Friedrich (1781–1833), professor of anatomy and surgery in Halle, editor of the *Deutsches Archiv für Physiologie* (1834)

Medici, Florentine family, Dukes from c. 1532

Melanchthon, Philipp (1497–1560), humanist, friend of Luther with whom he collaborated in developing the theoretical grounds of the Reformation

Melloni, Macedonio (1798–1854), Italian physicist noted for his discoveries in radiant heat

Mesmer, Franz Anton (1734–1815), Austrian physician, founder of the theory of therapeutic hypnotism called Mesmerism

Meyen, Franz Johann Friedrich (1804–40), author of *Neues System der Pflanzen-Physiologie* (1837–9)

Michelet, Carl Ludwig (1801–93), student of Hegel, professor of philosophy at Berlin, involved in publishing the complete works of Hegel; founder of the Berlin Philosophical Society, author of *Geschichte der letzten Systeme der Philos. in Deutschland von Kant bis Hegel* (1837–8); *Anthropologie und Psychologie* (1840); *Esquisse de logique* (Paris, 1856), and other works

Milne, William (1785–1822), British missionary, translator of the *Shing-yu*

Mirandola, Giovanni Pico, Count della (1463–94), Italian humanist and philosopher, best known for the *Oration on the Dignity of Man* (1486)

Mollweide, Karl Brandan (1774–1825), German mathematician

Morrison, Reverend Robert (1782–1834), missionary and sinologist, author of *Dictionary of the Chinese Language* (1815) and ‘Chinese Literature’ in the *Asiatic Journal*

Moses, the prophet of the Old Testament

Most, Georg Friedrich (1794–1832), professor of medicine in Rostock, author of *Die sympathetischen Mittel und Curmethoden* (1842)

Müller, Johannes Heinrich Jakob (1809–75), Professor of Physics at Freiburg/Breisgau, author of *Lehrbuch der kosmischen Physik* (1856), translator of Pouillet's *Eléments de physique: Lehrbuch der Physik und Meteorologie* (1842–4)

Müller, Johannes Peter (1801–58), comparative anatomist and physiologist; author of *Handbuch der Physiologie des Menschen* (1833–40)

Neumann, Carl Friedrich (1798–1870), professor of Chinese language in Munich, author of *Natur-und Religions-Philosophie der Chinesen, nach dem Werke des Tschu-hi* (1837)

Newton, Isaac (1632–1727), great English mathematician, physicist and astronomer, author of *Philosophiae naturalis principia mathematica* (1687) and *Opticks* (1704)

Noack, Ludwig (1819–85), theologist, philosopher and armchair psychologist who tried to analyse Schopenhauer from his works in *Die Meister Weiberfeind und Frauenlob. Eine Psychologische Antithese zwischen Schopenhauer und Daumer in Frankfurt* (1860)

Ockham, William of (c. 1288–1350), English nominalist philosopher; ‘Ockham's Razor’ refers to the principle of not multiplying entities unnecessarily

Ørsted, Hans Christian (1777–1851), celebrated Danish physicist and chemist; professor of physics in Copenhagen, author of *The Soul of Nature* (1852)

Owen, Sir Richard (1804–92), English zoologist and anatomist

Palladji, O., Palladius (Petr Iwanowitsch Kafarow), translator of *Lebensbeschreibung des Buddhas Schakjamuni* (1856)

Pander, Christian Heinrich (1794–1865), anatomist, colleague of d’Alton

Paracelsus (Philippus Aureolus Theophrastus Bombastus von Hohenheim) (1493–1541), Swiss physician and natural philosopher

Parrot, Georges Frédéric (1767–1852), physicist and mathematician

Petronius (Titus Petronius Arbiter) (c. 27–66 CE), Roman satirist, author of *Satiricon*

Platner, Ernst (1744–1818), physician, philosopher, and aesthetician, Professor of Physiology and Philosophy at Leipzig, author of *Philosophische Aphorismen* (1776–82); *Anthropologie für Ärzte und Weltweise* (1772); *Neubearbeitung: Neue Anthropologie* (1790)

Plato (427–347 BCE), the great Greek philosopher of immense influence on subsequent philosophy, and one of the most important influences on Schopenhauer

Plautus, Titus Maccius (c. 254–184 BCE), Roman comic playwright

Pliny the Elder (Gaius Plinius Secundus) (23–79 CE), general and author of *Historia naturalis* (*History of Nature*)

Plotinus (204–70 CE), Neo-platonist philosopher

Plutarch (46–125 CE), Greco-Roman statesman and historian

Pomponatius, Petrus (Pietro Pompanazzi) (1462–1524), Renaissance neo-Aristotelian philosopher

Pordage, John (1607–81), priest, astrologist, alchemist, mystic

Porphyry (Porphyrius) (c. 233–304 CE), Neo-platonist philosopher, student of Plotinus

Pouillet, Claude-Servais-Matthias (1790–1868), French physicist, known for his *work Eléments de physique expérimentale et de météorologie* (1827)

Priestley, Joseph (1733–1804), English theologian, philosopher and scientist

Prometheus, Greek god sentenced to eternal punishment by Zeus for having stolen fire from heaven and having given it to humans

Publius Syrus (c. first-century BCE), prominent Roman aphorist

Puységur, Armand Chastenet Marquis de (1751–1825), physician, magnetist

Pythagoras (c. 570–c. 497 BCE), early Greek sage, founder of Pythagorean tradition in philosophy

Radius, Justus Wilhelm Martin (1797–1884), professor of pathology in Leipzig, well-known oculist, edited *Scriptores ophthalmologici minores*, in which Schopenhauer's *Commentatio exponens Theoriam Colorum Physiologicam eandemque Primariam* was included

Rätze, Johann Gottlieb (c. 1760–1833), teacher at the gymnasium at Zittau, author of *Was der Wille des Menschen in moralischen und göttlichen Dingen aus eigener Kraft vermag und was er nicht vermag. Mit Rücksicht auf die Schopenhauersche Schrift: Die Welt als Wille und Vorstellung* (1820)

Regazzoni, Antoine, Italian magnetist and magician, author of *La Loi Magnétique* (1855)

Regis, Jean Baptiste (1663–1738), Father, translator of a commentary to the *I-Ching*

Reichlin-Meldegg, Karl Alexander von (1801–77), professor of philosophy in Heidelberg

Reil, Johann Christian (1759–1810), physician and professor at Halle and Berlin, a principal advocate of vitalism

Reimarus, Hermann Samuel (1694–1768), theologian and philosopher, author of *Die Vernunftlehre, als eine Anweisung zum richtigen Gebrauch der Vernunft in der Erkenntniß der Wahrheit, aus zwoen ganz natürlichen Regeln der Einstimmung und des Widerspruch hergeleitet* (1790)

Reinhold, Carl Leonhard (1758–1823), Professor of Philosophy in Jena and Kiel, Kant's first great popularizer

Reinhold, Christian Ernst Gottlieb (1793–1855), son of Carl Leonhard Reinhold and professor in Kiel and Jena

Rémusat, Jean-Pierre Abel (1788–1832), French scholar of Asiatic studies

Rey, Jean (1583–1645), French physician and chemist

Ritter, Heinrich (1791–1869), historian of philosophy, taught in Berlin, and later as university professor in Göttingen; co-author of *Historia Philosophiae Graeco-Romanae ex fontium locis contexta* (1838)

Rosas, Anton (1791–1855), Professor of Ophthalmology at the University of Vienna

Rosenkranz, Johann Carl Friedrich (1805–79), Professor in Königsberg, editor of edition of Kant's works (1838–40)

Rousseau, Jean Jacques (1712–78), French writer of the Enlightenment

Runge, Philipp Otto (1777–1810), painter, one of the Early German Romantics

Saint-Hilaire, Étienne Geoffroy (1772–1844), French naturalist known for his ideas on the unity of animal composition, now memorialized in the name of his discovery of Geoffroy's Cat (*Leopardus geoffroyi*) in South America

Saint-Hilaire, *see* Barthélemy Saint-Hilaire

Sangermano, Pater (Vincentius) (1758–1819), Barnabite, lived in Burma 1783–1808, author of *A Description of the Burmese Empire* (1833)

Sarrazin de Montferrier, Alexandre André Victor (pseudonym of A. de Lavisanne) (1792–1863), French mathematician and magnetist

Saunderson, Nicholas (1682–1739), physicist and astronomer at Cambridge

Saussure, Horace Benedict de (1740–99), Swiss naturalist who in 1787 climbed Mont Blanc and set its height through barometric pressure

Schelling, Friedrich Wilhelm Joseph von (1775–1854), philosopher of German Idealism and Romanticism, much criticized by Schopenhauer, though with somewhat more respect than Hegel and Fichte

Scherffer, Karl (1716–83), Jesuit mathematician and physicist, professor in Vienna

Schiefner, Anton (1817–79), Eastern scholar, author of essays on Buddhism

Schiller, Johann Christoph Friedrich (1759–1805), German poet, dramatist and aesthetician

Schleiermacher, Friedrich Ernst Daniel (1768–1834), professor of philosophy and influential protestant theologist; Schopenhauer attended one of his classes at the University of Berlin, 'History of Philosophy During the Period of Christianity', and was unimpressed

Schmidt, Isaak (Jsaak) Jakob (1779–1847), scholar of the orient

Scholl, Karl (1820–1907), evangelical pastor suspended in 1845 who then became an independent preacher in Nürnberg, author of *Erster Blick in die Wunderwelt des Magnetismus* (1853)

Schultz, *see* Schultz-Schultzenstein

Schultz-Schultzenstein, Carl Heinrich (1798–1871), physician and natural scientist, author of *Das System der Cirkulation in seiner Entwicklung durch die Thierreiche und im Menschen und mit Rücksicht auf die physiologischen Gesetze seiner krankhaften Abweichungen dargestellt* (1836)

Schulze, Gottlob Ernst (1761–1833), professor of philosophy at Wittenberg, Helmstadt, and Göttingen; author of *Aenesidemus* (1792), Schopenhauer's first philosophy professor (1810), who encouraged Schopenhauer's study of Plato and Kant, the two philosophers he would most esteem; Schopenhauer refers to Schulze's *Grundsätze der allgemeinen Logik* (*Principles of General Logic*) (1810) and *Kritik der theoretischen Philosophie* (*Critique of Theoretical Philosophy*) (1801)

Secchi, Angelo (1818–76), Italian astronomer, director of the observatory of the College of Rome

Seebeck, Thomas (1770–1831), physicist, discoverer of thermoelectricity, entoptic colours, and colour phenomena generated by polarized light cast through dual refracting crystals

Seneca, Lucius Annaeus (4 BCE – 65 CE), Roman poet and Stoic thinker, committed suicide at the instigation of Nero

Sextus Empiricus (fl. c. 200 CE), Greek sceptical philosopher

Shakespeare, William (1564–1616), the great English dramatist and poet

Silvestre, Augustin-François Baron de (1762–1851), natural scientist

Simonides of Leos (c. 556–ca. 468 BCE), Greek poet

Smith, Robert (1689–1768), Professor of Mathematics at Cambridge

Socrates (470–399 BCE), Greek philosopher, teacher of Plato

Sonnerat, Pierre (1745–1814), author of *Reise nach Ostindien und China* (1783)

Spence, William (c. 1783–1860), natural scientist and economist, co-author with William Kirby of *Introduction to Entomology* (1815–26)

Spiegel, Friedrich (1820–1905), Eastern scholar; professor of oriental languages at Erlangen, Leipzig, and Bonn; translator of *De officiis sacerdotum Buddhicorum* (1841) and *Anecdota Pâlica* (1845)

Spinoza, Benedict (Baruch) de (1632–77), Dutch philosopher of Jewish origin

Sprengel, Christian Konrad (1750–1816) author of *Das entdeckte Geheimnis der Natur im Bau und in der Befruchtung der Blumen* (1793)

Staël-Holstein, Anna Louise Germaine Necker, Baronne de (1766–1817), French critic, novelist, and literary patron

Stahl, Georg Ernst (1660–1734), physician, chemist, and physiologist, professor at the universities in Jena and Halle, considered by some to be the founder of the theory of physiology

Staunton, Sir George Thomas (1737–1801), English traveller and orientalist

Sterne, Laurence (1713–68), English satiric novelist, author of *The Life and Opinions of Tristram Shandy, Gentleman*, one of Schopenhauer's favourite novels

Stieglitz, Israel (also Johann) von (1767–1840), physician in Hannover, author of *Ueber den thierischen Magnetismus* (1812)

Stobaeus, Joannes (fifth century CE), author of a collection of philosophical sayings of 500 Greek authors, published in Leipzig by Teubner in Greek as *Anthologion* (1855) and in Latin as *Florilegium* (1855–7)

Strato of Lampsacus (died c. 268 BCE), Greek philosopher of the peripatetic school, called ‘the natural philosopher’; successor to Theophrastus

Suárez, Francisco (1548–1617), Spanish philosopher and transmitter of medieval thought

Szápáry, Count Franz (1804–75), Hungarian magnetist, author of *Ein Wort über animalischen Magnetismus, Seelenkörper und Lebensessenz*

(1840)

de Talleyrand-Périgord, Charles Maurice (1754–1838), French statesman

Thomasius, Christian (1655–1728), instructor in jurisprudence and philosopher, predecessor of the Enlightenment, staunch opponent of witch-trials

Tiedemann, Dietrich (1748–1803), professor of philosophy and Greek in Marburg; author of *Disputatio de quaestione quae fuerit artium magicarum origo* (1787)

Treviranus, Gottfried Reinhold (1776–1835), German natural scientist and mathematician

Troxler, Ignaz Paul Vital (1780–1866), ophthalmologist, author of 'Ueber die Frage: Warum sehen wir mit zwey Augen die Gegenstände nicht doppelt?', *Ophthalmologische Bibliothek* (1807)

Turner, Samuel (1749–1802), sinologist, Sanskrit scholar

Turnour, George (1799–1843), British government agent in Ceylon, author of *The First Twenty Chapters of Mahawanz*o (1836)

Twesten, August (1789–1876), Professor of Theology in Berlin, author of *Grundriß der analytischen Logik* (*Outline of Analytic Logic*) (1834)

Unzer, Johann August (1727–99), physician and scientist in Hamburg and Altona

Unzer, Johanna Charlotte, née Ziegler (1725–82), wife of Johann August Unzer

Upham, Edward (1776–1834), Eastern scholar, author of *History of the doctrine of Buddhism, with notices of the Kappooism or demon worship, and of the Bali or planetary incantations of Ceylon* (1829) and *The Mahavansi, the Raja Ratnacari and the Raja-Vali* (1833)

Vanini, Lucilio (Giulio Cesare) (1584–1619), late Renaissance Italian, author of *Amphitheatrum aeternae providentiae divino-magicum. Christiano-physicum, nec non astrologo-catholicum. Aversus veteres philosophos* (1615) and *De admirandis naturae reginae deaeque mortalium arcanis* (1616), for the latter of which, especially, he was tortured and executed by the church

Vauvenargues, Luc de Glapiers, Marquis de (1715–47), French moralist

Vesalius, Andreas (1514–1564), physician and professor in Padua; personal physician for Karl V and Philip II of Spain; his *De corporis* *humani fabrica* (*On the Structure of the Human Body*) provided the foundation for modern anatomy

Virgil (Publius Vergilius Maro) (70–19 BCE), leading Roman poet

Voltaire (François-Marie Arouet) (1694–1778), French thinker central to the Enlightenment

Weber, Ernst Heinrich (1795–1878), Professor of physiology and comparative anatomy in Leipzig; author of *Tractatus de motu Iridis* (1821) and *Anatomisch-physiologische Erklärung der Sinnesverrichtung des Gesichts* (1805)

Wierus, Johannes (1515–88), physician in Arnheim, opponent of the persecution of witches, author of *De praestigiis daemonum et incantationibus ac veneficiis* (1563)

Winkelried, Arnold von, legendary Swiss hero of the battle of Sempach (1386)

Wolff, Christian (1679–1754), German Enlightenment philosopher

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